

## REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IV

Site Name: Landes CompanyEPA ID#: TND003328960

Alias Site Name: \_\_\_\_\_

City: ChattanoogaCounty or Parish: HamiltonState: TNRefer to Report Dated: 4.1.94Report type: SIReport developed by: TDSF - Craig Stannard**DECISION:** 1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:

<input checked="" type="checkbox"/> 1a. Site does not qualify for further remedial site assessment under CERCLA (No Further Remedial Action Planned - NFRAP)		<input type="checkbox"/> 1b. Site may qualify for further action, but is deferred to:		RCRA
				NRC

	2. Further Assessment Needed Under CERCLA:	2a. (optional) Priority:		Higher		Lower
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2b. Activity Type:		PA		ESI		
		SI		HRS evaluation		

	Other: _____		
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**DISCUSSION/RATIONALE:**

PAH compounds, cyanide, pesticides, and metals found in soil, sediment, and waste piles on-site. Site does not score high enough to be a candidate for the NPL. NFRAP.

Report Reviewed and Approved by: K McConney Signature: R. McConney Date: 1.29.96Site Decision Made by: R. McConney Signature: R. McConney Date: 1.29.96

DATE REPORT ACCEPTED 1-29-96  
DISPOSITION NFRAP  
SAM SIGNATURE R. McConney

SITE INVESTIGATION  
NARRATIVE REPORT

LANDES COMPANY  
CHATTANOOGA, HAMILTON COUNTY, TENNESSEE

CERCLIS No. TND 003328960  
TENNESSEE FILE No. 33-633

Prepared for the  
**TENNESSEE DIVISION OF SUPERFUND**  
in cooperation with  
**WASTE MANAGEMENT DIVISION**  
**U.S. ENVIRONMENTAL PROTECTION AGENCY**

DATE: April 1, 1994

Prepared By  
Craig Stannard

Reviewed By  
Wayne Everett

Approved By

Craig Stannard Wayne Everett, Charlie J. Johnson, TDSF/SAS  
5/4/94

Executive Summary  
Landes Company Site  
TND 003328960

Attached is the Site Investigation (SI) for the Landes Company Site, located in Hamilton County, Tennessee.

The site is located on 17 acres of land at 314 Hooker Road in Chattanooga. The site is currently being used by Signet Contracting, the Winton Company, and Simmons Demolition for the storage of pipe insulation products, truck parts, and construction equipment respectively. There is currently no manufacturing or waste disposal occurring at the site. The site is in an urban area that is heavily industrialized. Residential and commercial development is also present. The current owner of the site is Investment Properties, Inc. which is being represented by Lawyers Title and Escrow, Inc. Their address is:

Lawyers Title and Escrow, Inc.  
737 Market Street, Suite 400  
Chattanooga, Tennessee 37402

From the early 1960s until 1991, businesses at the Landes Company site have been engaged in metal fabrication and in the manufacturing and rental of concrete forms and scaffolding. Operations at the site involved welding, machining, and painting. The Tennessee Division of Water Pollution Control inspected the facility in June, 1981 and found it to be discharging raw sewage, shop oils, and sludges into surface drainage ditches emptying into Chattanooga Creek.

In May 1990, the Tennessee Division of Solid Waste Management received a complaint alleging that paints, paint thinners, concrete cleaners, and other assorted wastes used in the manufacturing process, were periodically being poured out onto the ground at the site. The state investigated and discovered an illegal dump at the southeast corner of the site. The dump contained small containers of oil, several gallons of roofing cement, a 15-20 gallon container of concentrated ammonium hydroxide (pH 13.6), and a substance listed as industrial pan handler. The dump also contained piles of foundry sand, separator sludge, baghouse dust, and shredder fluff. Samples of the foundry sand were collected and found to contain hazardous quantities of lead. The TDSWM cited the Landes facility with several Notices of Violation for the improper storage and disposal of hazardous waste on site. In June, 1991, the Tennessee Division of Superfund arranged for its contractor, Ferguson Harbor Service, Inc. to initiate an emergency overpack of the substances of concern. Four 85-gallon drums were filled and then stored in a shed on site.

Manufacturing and metal fabrication operations ended at the site in 1991. TDSWM became involved with the site again in April, 1992 when it required Hydro-Vac Services, Inc. to remove the latex sludge it had been storing at the site. There was evidence that some of the sludge had leaked into storm sewers emptying into Chattanooga Creek.

A Preliminary Assessment was completed on the site in April, 1993.

This Site Investigation Report has discovered the presence of PAH compounds, Cyanide, pesticides, and metals in the soil, sediment, and waste piles at the site. The greatest health risk appears to be through the surface water-human food chain exposure pathway. The second greatest health risk appears to be through the soil exposure pathway. Most of the site is fenced and not easily accessible to the general public. However, contaminated soil areas are within 100 feet of buildings used by on-site workers and there is contaminated waste and soil at the southeast corner of the site. The southeast corner of the site is unfenced, unguarded, and easily accessible to nearby residents.

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REPORT: Site Investigation  
SITE: Landes Company  
CERCLIS No.: TND 003328960  
TN-FILE No.: 33-633  
PREPARED BY: Craig Stannard  
Tennessee Department of Environment and  
Conservation, Division of Superfund  
DATE: April 1, 1994

## 1.0 INTRODUCTION

The Tennessee Division of Superfund (TDSF), under cooperative agreement with the U.S. Environmental Protection Agency (EPA), conducted a Site Investigation (SI) of the Landes Company in Chattanooga, Hamilton County, Tennessee. This investigation was performed under the authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), and the Superfund Amendments and Reauthorization Act (SARA).

### 1.1 Objectives

The purpose of this investigation is:

- to collect information concerning conditions at the site sufficient to assess the threat to human health and the environment;
- to identify, if possible, sources which could be attributed to known site contamination;
- and to determine the need for further investigation under CERCLA/SARA or other authority.

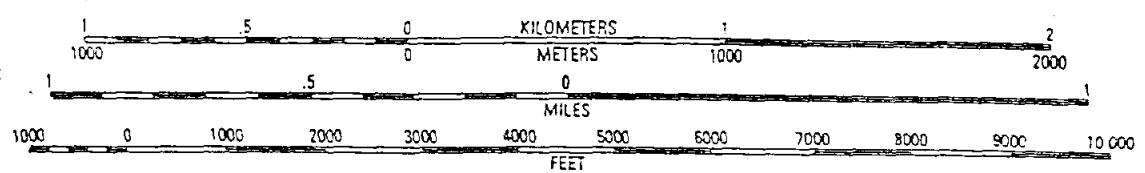
### 1.2 Scope of Work

The scope of this investigation will include the following activities:

- review of available file information;
- a comprehensive target survey;
- sampling environmental media to evaluate and document HRS factors;
- and on-site reconnaissance.

Base Map is a Portion of the Following 7.5' U.S.G.S.  
Quadrangles: Chattanooga, Tennessee, 1976; Fort Oglethorpe,  
Georgia-Tennessee, 1982.

SCALE 1:24 000



CONTOUR INTERVAL 5 METERS

Figure 1. Site Location Map, Landes Company

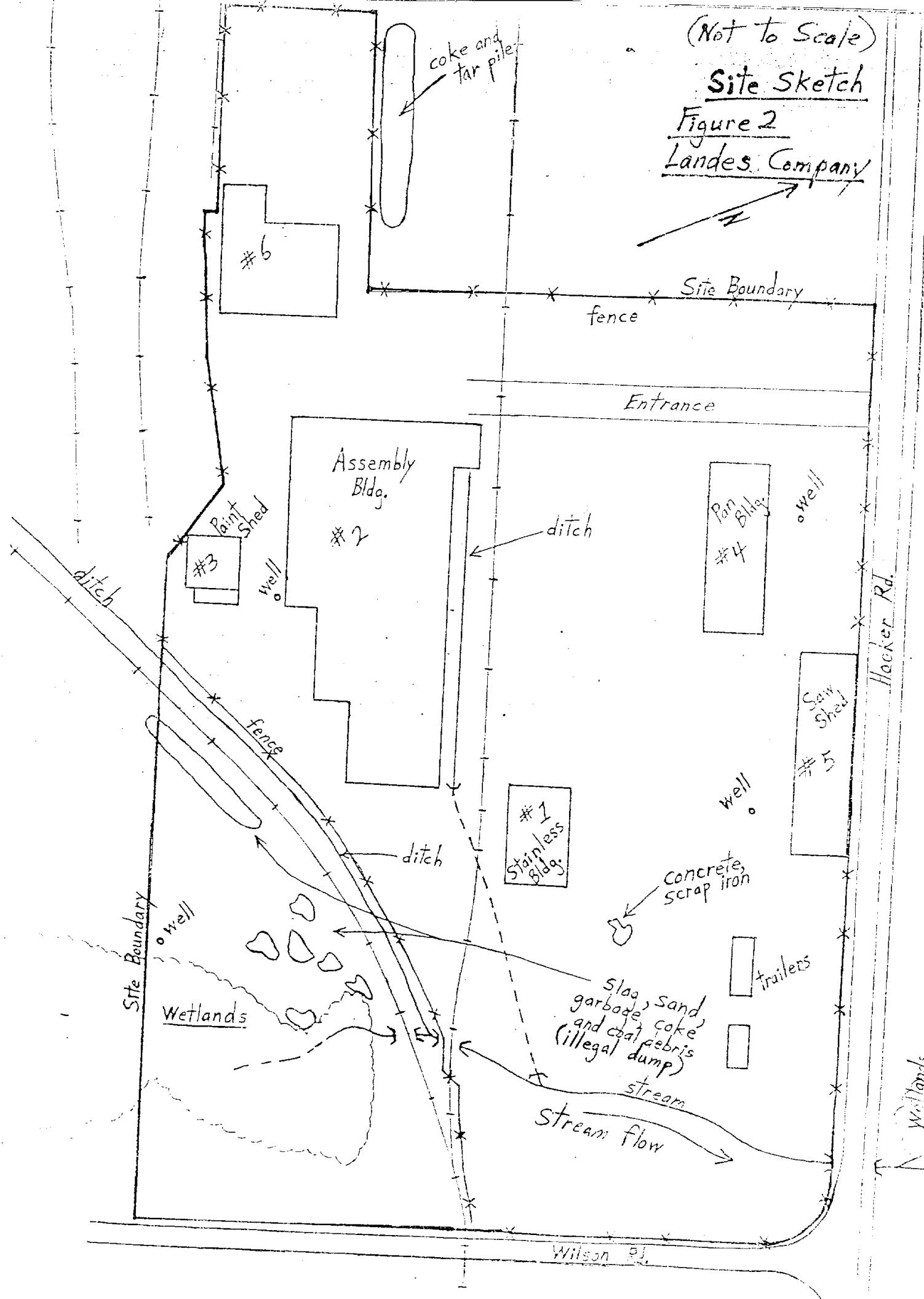


(Not to Scale)

Site Sketch

Figure 2

Landes Company



## 2.0 SITE CHARACTERIZATION

### 2.1 Location

The Landes Company site is located at 314 Hooker Road in Chattanooga, Hamilton County, Tennessee (see Site Location Map, Figure 1) (Ref. 10). The geographic coordinates of the site are latitude 34° 59' 43" north and longitude 85° 18' 30" west. The site is found on the U.S.G.S. Quadrangle; Fort Oglethorpe, Georgia-Tennessee, 1982 (see Figure 1). To reach the site from Interstate 24, travel south on Rossville Boulevard for approximately 2 miles. Turn right onto Hooker Road and continue west for 1 mile. The Landes Company site is on the left side of Hooker Road immediately after the intersection with Wilson Road (Ref. 47).

Hamilton County, Tennessee receives 56 inches of annual precipitation and the 1-year/24-hour rainfall is 3.1 inches. The wettest months are December-March, and the driest are May-June, and August-November. Snowfall is possible December-March (Refs. 40,42).

### 2.2 Site Description

The Landes Company site is located in a low lying area approximately 1/4 of a mile west of Chattanooga Creek. The area surrounding the site is urban with heavy residential and industrial development (Refs. 1,43-48). A 4-mile radius sweep around the site takes in most of Chattanooga (population: 152,466) as well as Rossville (population: 3,601), East Ridge (population: 21,101), and Lookout Mountain (population: 1,901). The nearest school is the Piney Woods Elementary School on Wilson Road approximately 300 feet east of the site (Refs. 24,26,28).

The site is bounded on the north by Hooker Road and an automobile scrap yard. It is bounded on the east by Wilson Road, an automobile scrap yard, and the Piney Woods Elementary School. It is bounded on the south by the Chattanooga Coke and Chemical Corporation site and Velsicol Chemical Corporation's residue hill. The site is bounded on the west by Secondary Aluminum Smelters, Inc., an active metal recycling facility. The Chattanooga Coke and Chemical Corporation site, Residue Hill, and the Morningside Chemical Company are the closest Superfund sites to the Landes Company site (Refs. 5,27-29,44,47,49).

The site is approximately 17 acres in size and is rectangular in shape (see Figure 2) (Refs. 5,6). The site is relatively flat. There are six industrial buildings and two mobile home trailers on the site. The 6 industrial buildings are constructed of a combination of steel framing and masonry. Building #1 on the site sketch was once known as the "stainless building". It is currently empty except

for several piles of red clay on the concrete floor. Building #2 on the site sketch is the largest structure on the site. It was formerly called the "assembly building". It is currently being used to store packaged insulation products and truck parts. Building #3 on the site sketch is the former paint shed. It is currently empty except for two 5-gallon buckets and one 50-gallon plastic drum. The drum appears to be full of liquid and is labeled "lemon disinfectant". The two buckets are half full with dry yellow paint. Building #3 has a small storage shed attached to it on the east side (Refs. 27-29). This addition contains 4 drums (emergency overpacks) left there by Ferguson Harbor Service, Inc. (the State's Superfund contractor) during an emergency response/partial cleanup at the site in 1991 (Refs. 21,22). Building #4 on the site sketch was once known as the "pan" building. It is a large quonset hut structure that is currently being used to store a backhoe and trucks. Building #5 on the site sketch was a former saw shed that is currently being used to store lumber and metal scaffolding. There are several (approximately 10) 55-gallon steel drums present at the eastern end of the shed. Some of the drums are filled or partially filled with oil. Most contain only scrap metal and trash. There are approximately 4 drums at the western end of the shed which may have industrial chemicals in them. One drum is labeled "concrete form releasant". Building #6 on the site sketch is a large warehouse that is empty except for two piles of sand and a room partially filled with packaged fiberglass insulation products and boxes of polyethylene sheeting. The two trailers are located at the northeast corner of the site. One of the trailers is being used by a maintenance man/security guard at night. The other trailer is vacant (Refs. 27,29,53).

The Central of Georgia Railway Company line cuts diagonally across the southeast corner of the site (Ref. 49). A railroad spur from the mainline runs along the north side of the assembly building. Two drainage ditches parallel the railroad tracks and conduct runoff into a small stream that crosses the eastern end of the site. These drainage ditches receive runoff from adjacent industrial properties to the west as well as from the site itself. Storm drains are located throughout the site which drain the site and empty into the stream at the east end of the site (Refs. 27-29).

Most of the area surrounding the main buildings is sparsely vegetated with grass and weeds. The area east of the paint shed is bare ground that may be indicative of vegetative stress. The driveway into the site is gravel covered and the area between the assembly building and building #6 is surfaced in concrete. The eastern end of the site is densely vegetated with hardwoods, native grasses, weeds, and briars (Refs. 29,49). There are six (6) locked, shallow monitoring wells across the site (Ref. 27-29,49).

Most of the site (that portion containing the buildings and trailers) is surrounded by a tall, chain-link, barbed-wire fence. The fence has several large holes in it along the southern perimeter which could permit human access. There are two gated entrances to the site along Hooker Road. The gates are open and the site is not guarded during daylight hours. However, the gates are locked and the site is watched by a maintenance man at night (Refs. 27-29,49).

The southeastern corner of the site (approximately 3 acres) is unfenced. A wetland borders this area to the south. The southeastern corner of the site once served as the Landes Company sandblasting area. It currently contains a small, abandoned, industrial garbage dump. The dump contains at least 10 empty 55-gallon steel and cardboard drums, old tires, piles of sandblasting sand, piles of foundry sand and slag, and piles of coal and coke debris. This area is easily accessible by local residents (Refs. 27-29,49).

### **2.3 Operational and Regulatory History**

Industrial/commercial activity has occurred at the site since 1947. Prior to the early 1960s, the site may have been used for the processing of cotton. However, since the early 1960s, most of the businesses active at the site have been engaged in metal fabrication and in the manufacturing and rental of concrete forms and scaffolding (Refs. 10,23,37). The assembly building was used for the actual fabrication of steel forms and tubular frames, including welding, machining operations, paint baths, etc. The other buildings on the site were typically used as support facilities for the overflow of products and/or special projects. In June 1981, the Tennessee Division of Water Pollution Control inspected the facility and found it to be discharging raw sewage, shop oils, and sludges into surface drainage ditches and storm drains emptying into Chattanooga Creek. Concrete Forms Corporation (CFC), operating at the Landes Company site at that time, was issued a Notice of Violation. In 1983, CFC connected to the Chattanooga municipal sewer system (Refs. 12,13,35,36,49).

In May 1990, the Tennessee Division of Solid Waste Management (TDSWM) received an anonymous complaint concerning the improper disposal at the Landes Company site of paints, paint thinners, concrete cleansers, and other assorted wastes used in the manufacturing process. Allegedly, these substances were periodically being poured onto the ground at the site (Ref. 9). The TDSWM investigated the complaint and discovered an illegal on-site dump at the southeastern corner of the site where several kinds of hazardous industrial wastes and chemicals were identified. The list included small containers of oil, several gallons of paint, several gallons of roofing cement, a 15-20 gallon container of concentrated ammonium hydroxide

(pH 13.6), and a 5-gallon container of a substance listed as industrial pan handler. The illegal dump also contained piles of foundry sand, separator sludge, baghouse dust, and shredder fluff. Samples of foundry sand were collected and found to contain hazardous quantities of lead. The TDSWM cited the facility with several Notices of Violation, from June 1990 until January 1991, for the improper storage and disposal of hazardous waste containers (Refs. 10,11,18,33-35). Superfund's contractor, Ferguson Harbor Service, Inc., overpacked the various containers and moved them to the Landes Company paint shed (Refs. 21,22,33-35).

The actual manufacturing and metal fabrication of concrete forms and scaffolding ended at the site in 1991. In April 1992, the TDSWM forced Hydro-Vac Services, Inc. to remove the latex sludge it had been storing at the site. The latex sludge was being stored in the pan building and there was evidence at the time that some of the sludge had leaked from the building into a storm water drainage system leading to Chattanooga Creek (Refs. 27-29,38). Currently, the site is being used by Signet Contracting, Inc. for the storage of pipe insulation products and by the Winton Company for truck repair. Simmons Demolition uses the pan building for storage of a backhoe and trucks (Ref. 53).

Tri-State Testing and Drilling completed a Phase 2 environmental assessment of the site property on December 19, 1990. Analytical results for surface soil, subsurface soil, and groundwater samples collected during this investigation showed the presence of both organic and inorganic hazardous substances at the site (Refs. 49).

A Site Discovery was completed on the site on October 8, 1991. A Preliminary Assessment report was completed on the Landes Company site on April 28, 1993 (Refs. 23,54).

The Landes Company site is currently owned by the Investment Properties Company. Lawyers Title and Escrow, Inc. is the legal representative for the Investment Properties Company. Their phone number is (615) 756-4154. Their address is:

Lawyers Title and Escrow, Inc.  
737 Market Street, Suite 400  
Chattanooga, Tennessee 37402

The official contact at Lawyers Title and Escrow, Inc. for the Investment Properties Company is attorney Robert Brown (Ref. 56).

### 3.0 SITE INVESTIGATION SAMPLING ACTIVITIES

On February 7th and 8th, 1994, personnel from the Tennessee Division of Superfund conducted Site Investigation Sampling of the Landes Company site. A total of 15 soil, sediment,

and waste samples were collected, including one duplicate sample. Groundwater samples and surface water samples were not collected during the site investigation. The sample points are shown on the Sample Location Map (Figure 3) and the sample points are described in Table 1 (Ref. 56).

Samples were sealed, iced in coolers, and transported to the state laboratory in Nashville, where they were placed in the custody of laboratory personnel for analysis. Analysis was performed according to standard laboratory protocols. Detection limits for the individual parameters are listed on the analytical data sheets. The sampling methodology used was as prescribed by EPA guidance documents (Ref. 56). All samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (extractable organics), pesticides, polychlorinated biphenyls (PCBs), cyanide, and metals. The analytical data sheets are presented in Appendix B (Ref. 52).

#### 4.0 GROUND WATER PATHWAY

##### 4.1 Hydrogeology

Soil borings conducted in conjunction with the Tri-State Testing and Drilling-Phase 2 environmental assessment show that the site is underlain, from the surface down, with fill material, residual clay, and limestone and dolomite bedrock (Ref. 49).

The fill material varies from 2 feet to about 10 feet in thickness and generally consists of various shades of brown and gray, silty to sandy clay containing crushed stone, gravel, and rock fragments. The fill material ranges from soft to stiff in consistency with a relatively moderate coefficient of permeability (Ref. 49).

The residual clay underlying the fill material is derived from the weathering of the subadjacent limestone and dolomite bedrock. The residual clay is reddish-brown, silty, and contains chert fragments. It ranges from firm to very stiff in consistency with a relatively low coefficient of permeability (Ref. 49).

The bedrock underlying most of the site is the Chickamauga Limestone. It occurs at a depth below the surface of from 12 to 24 feet. The Chickamauga Limestone is a light-gray, fine-to-coarse grained, thin-to-thick bedded limestone unit that is 1,000 to 1,500 feet thick. The Chickamauga Limestone has no significant confining layers. Groundwater occurs along joints, fractures, and bedding planes that have been enlarged through chemical weathering. Well yields are highly variable (Refs. 2,4,20,29,39,42,49).

The extreme northeast corner of the site is underlain by the Knox Group. The Knox Group consists of dolomite that is

very siliceous, light-to-dark gray, fine- to coarse-grained, and thin- to thick-bedded. The Knox Group is approximately 2,600 feet thick and has no significant confining layers. The Knox Group is karst and groundwater occurs along joints, fractures, and bedding planes that have been enlarged through chemical weathering. The Knox dolomite is separated from the Chickamauga Limestone by a major thrust fault that cuts diagonally across the northeast corner of the site (Refs. 2,4).

Groundwater exists under water table conditions at the site at depths ranging from 1 to 9 feet below the ground surface. The aquifer of concern is the Chickamauga Limestone. The groundwater gradient at the site is to the north towards Chattanooga Creek. Recharge to the aquifer is derived from precipitation at the site and on higher areas to the west and southwest. Discharge is via seeps and wells. Analytical data from monitoring wells on the site and from monitoring wells upgradient of the site indicates that groundwater both at the site and upgradient of the site is contaminated with hazardous substances (Refs. 4,39,49).

#### **4.2 Ground Water Targets**

There are no known drinking water wells within the 4-mile site radius. Drinking water is supplied to residents in this area entirely by the Tennessee River from inlets located upgradient from the site. Groundwater is not known to be used for either irrigation or livestock watering in this urban area (Ref. 19). The only wells known to exist here are for monitoring or industrial use (Refs. 20,29,39).

There are no wellhead protection areas (WHPA) designated within the 4-mile site radius (Ref. 16).

#### **4.3 Ground Water Conclusions**

The Tri-State Testing and Drilling-Phase 2 environmental assessment of the site has shown that groundwater at the site is contaminated (Ref. 49). Groundwater studies at neighboring Superfund sites (Morningside Chemical Company, Chattanooga Coke and Chemical Company, and Residue Hill) have shown that groundwater is similarly contaminated upgradient of the Landes Company site. The contaminated groundwater at the site should pose little or no health threat to workers or residents in the area due to the complete absence of drinking water wells within the area of concern. The only wells potentially affected by the site are monitoring wells or industrial wells (Refs. 20,39).

## 5.0 SURFACE WATER PATHWAY

### 5.1 Hydrologic Setting

The site is within both the 100 year and the 500 year flood zones of Chattanooga Creek (Ref. 3). Overland drainage from the site, and from some of the industrial properties to the west of the site, flows through on-site storm drains and surface ditches into a small stream at the eastern end of the site. The small stream flows northward for approximately 1/4 of a mile and empties into Chattanooga Creek (Refs. 12,27-29,38). Chattanooga Creek flows northward for approximately 5 miles and enters the Tennessee River (Nickajack Lake) at river mile 460.6. The Tennessee River comprises the lower portion of the 15-mile downstream segment (Refs. 43,44,47,48).

### 5.2 Surface Water Targets

There are no surface water intakes located within the 15-mile downstream segment. The Tennessee American Water Company supplies drinking water to the entire Chattanooga, Rossville, and East Ridge areas (all residents within a 4-mile radius of the site). An estimated 177,855 people are served by this system (Ref. 30). The five raw water intakes for this system are located on the Tennessee River at river mile 465.4, approximately 4.8 miles upstream from the confluence of Chattanooga Creek and the Tennessee River (Ref. 15).

The average flow of the Tennessee River is 36,650 cubic feet per second (cfs). The average flow of Chattanooga Creek is 125 cfs. The Tennessee River is used as an industrial and drinking water supply. It is used for fishing (both commercial and private), recreation, and irrigation, and it is a water source for livestock and wildlife. Chattanooga Creek is a fishery. It is classified as a water supply for industry, irrigation, livestock, and wildlife (Refs. 17,24-26,31,37).

Known U.S. endangered species in Hamilton County, Tennessee are the bald eagle, peregrine falcon, dromedary pearly mussel, pink mucket, orangefoot pimpleback, Cumberland monkeyface, and the large-flowered skullcap (Ref. 14). A small wetland borders the southern perimeter of the site. There are no other known environmentally sensitive or critical habitats within the 15-mile downstream segment (Refs. 27-29,41).

### 5.3 Sample Locations

Sediment was sampled along the site's surface water pathway in an attempt to observe any contaminant migration from the site. Sampling occurred from the wetland south of the site

and the railroad ditch west of the site to the culvert under Hooker Road at the northeast corner of the site.

#### 5.4 Analytical Results

As indicated in the Organic Analytical Results for Sediment Samples, Table 2, Polynuclear Aromatic Hydrocarbons (PAHs) were found widely distributed in the sediment samples. Several PAHs were detected in small quantities in sediment samples LC-SD-02 and LC-SD-03. Many of these same PAHs were not detected in background sediment sample LC-SD-01. The greatest concentration of PAHs occurred in background sediment sample, LC-SD-04. Bis (2-Ethylhexyl) Phthalate, Beta BHC, and Delta BHC were found in downgradient sediment sample LC-SD-05 in concentrations at least 3 times those of the background samples. Compounds 1,2,4-Trichlorobenzene and 2,4-Dimethylphenol were detected in LC-SD-05 but not in any of the background samples. Toluene and Hexachlorobenzene were found only in background sample LC-SD-01 (Ref. 52).

As shown in the Inorganic Analytical Results for Sediment Samples, Table 3, Cadmium, Chromium, Cobalt, Manganese, Nickel, and Zinc were found in sediment sample LC-SD-05 in concentrations at least 3 times those in the background samples. A high concentration of Cyanide was found in background sediment sample LC-SD-04. A significantly smaller quantity of Cyanide was detected in downgradient sediment sample LC-SD-05. In samples LC-SD-02 and LC-SD-03, Arsenic and Manganese were present in concentrations 3 times those in background sediment sample LC-SD-01 (Ref. 52).

#### 5.5 Conclusions

There are no drinking water inlets within the 15-mile downstream segment. Potential targets along the site's surface water migration pathway are the small wetland habitat adjacent to the southeast corner of the site and the Chattanooga Creek and Tennessee River fisheries. There are no sensitive environments along the 15-mile downstream segment.

The analytical data indicates that trace concentrations of PAHs and metals appear to have migrated from the dump into the wetland at the southeast corner of the site. Most of the PAHs and Cyanide in the stream at the northeast corner of the site, however, appear to have come from off-site industrial properties southwest of the site. Some of the PAHs may have come from the railroad ties adjacent to the ditch. Bis (2-Ethylhexyl) Phthalate, Beta and Delta BHC, and several metals may have come directly from the Landes property itself.

## 6.0 SOIL EXPOSURE AND AIR PATHWAYS

### 6.1 Targets

There are approximately 5 workers on the site. There are no on-site residents and most of the site is fenced. At night, the fenced area is guarded or watched. The aesthetic and recreational value of the site is minimal. However, the southeast corner of the site is unguarded and unfenced and easily accessible to area residents (Refs. 27-29, 53).

There are an estimated 10,000 people living within a 1-mile radius of the site. An estimated 160,000 people live within 4 miles of the site. Cities located within a 4-mile radius of the site include Chattanooga (population: 152,466), Rossville (population: 3,601), East Ridge (population: 21,101), and Lookout Mountain (population: 1,901). Table 8 gives a complete breakdown of the 4-mile site radius population. Land use for the area of concern is mostly industrial, residential, and commercial. The Piney Woods Elementary School is approximately 300 feet to the southeast of the site (Refs. 1,24,26,27-29).

### 6.2 Sample Locations

Five soil samples, including a duplicate sample, were collected on the site in areas of suspected contamination. A background soil sample was collected on site in an area assumed to be relatively free of contaminants. Four waste pile samples were collected in the dump area at the southeast corner of the site (Ref. 56).

### 6.3 Analytical Results

As indicated in the Waste Pile Samples Analytical Results, Tables 6 and 7, three of the waste pile samples, LC-WS-01, LC-WS-02, and LC-WS-04, showed significant concentrations of PAHs and metals. Waste sample LC-WS-01 showed a high concentration of Cyanide and significant concentrations of the pesticides, Alpha, Beta, Delta, and Gamma BHC (Ref. 52).

As indicated in the Analytical Results for Soil Samples, Tables 4 and 5, some of the soil samples collected in the dump area and in the vicinity of the Assembly Building showed PAH compounds, Cyanide, and several metals, including Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, and Zinc, to be present in concentrations at least 3 times those in background soil sample LC-SS-01 (Ref. 52).

Hexachlorobenzene, Delta BHC, Dieldrin, Heptachlor, 4-Chloro-3-Methyl Phenol, 2,4-Dichlorophenol, Phenol, 2,4,6-Trichlorophenol, and Toluene were detected in some of the soil samples but not in the background sample LC-SS-01 (Ref. 52).

#### **6.4 Conclusions**

The Landes Company site is located in an urban area. Nearby residences and the Piney Woods Elementary school lie approximately 300 feet to the southeast of the site. There are no daycare facilities within 200 feet of the site. Site Investigation sampling has identified contaminated soil and waste pile source areas at the site. These areas are uncovered, unlined, and largely unvegetated. The waste piles and part of the soil contaminated source area is unfenced and accessible to the general public. There are no on-site residents but the soil contaminated source area is within 100 feet of the assembly building which is used by on-site workers.

#### **6.5 Air Monitoring**

A portable air quality monitor (HNu) was carried on site during the SI. No measurements above background were detected. No formal air monitoring or sampling was conducted.

#### **6.6 Conclusions**

There are no recorded air releases from the site. Toluene was the only volatile hazardous substance detected in samples collected at the site and the concentrations were small. The Methylene Chloride detected in many of the samples is considered a laboratory artifact (Ref. 52). The air exposure pathway appears to pose only a minimal health threat, mainly to the few on-site workers. There appears to be little, if any, health risk to nearby residents or students at the Piney Woods Elementary School.

### **7.0 WASTE CHARACTERISTICS**

Bis (2-Ethylhexyl) Phthalate is a plasticizer used in the manufacturing of resins, elastomers, and plastics. It is a possible human carcinogen, possible human mutagen, and a possible teratogen (Ref. 7).

PAH compounds are by-products of combustion with most of them resulting from commercial and residential coal burning, coke manufacturing, petroleum refining, shale refining, and kerosene processing. PAHs are present in coal tar, asphalt tarring operations, cigarette smoke, food, and the atmosphere as a product of incomplete combustion. PAHs are used in industry as wood preservatives. Naphthalene is a poison. It is used in the dye industry. Anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (ghi) perylene, chrysene, Benzo (a) anthracene, indeno (1,2,3-cd) pyrene, phenanthrene, fluoranthene, and pyrene are carcinogens (Refs. 7).

Hexachlorobenzene is a carcinogen. It is used as a wood preservative and as a fungicide (Refs. 7).

Aldrin, Alpha BHC, Beta BHC, Delta BHC, and Gamma BHC are insecticides and/or pesticides that are suspected human carcinogens. Dieldrin is an insecticide. It is an acute toxin and a possible carcinogen. Heptachlor is a highly toxic pesticide (Refs. 7).

Arsenic is highly poisonous and carcinogenic. Arsenic is used in the manufacturing of herbicides, insecticides, and pesticides. It is also used in textile printing, glass production, paints, tanning, and as an alloy of copper and lead. Lead and mercury are highly toxic and both attack the central nervous system. Chromium is a carcinogen and a mutagen. It is used in steel manufacturing, electroplating, welding, tanning, dyes, and in the chemical industry as a catalyst. Lead is widely used in the chemical industry and in the manufacturing of paints, storage batteries, organic and inorganic lead compounds, construction materials, ceramics, plastics, and electronic devices. Mercury is used in thermometers, switches, fluorescent lamps, mining and metallurgy, dentistry, and in the manufacturing of pharmaceuticals, agricultural chemicals, and antifouling paints. Cadmium, cobalt, copper, and nickel are suspected human carcinogens. Cadmium is used in electroplating, batteries, paints, electronics, photography, insecticides, and as an additive in rubber and plastic. Cobalt is used in paints and enamels, glassware, pottery, photography, electroplating, and medicine. Copper is used in wire, plumbing, metal alloys, electroplating, insecticides, and paints. Nickel is used in making stainless steel, metal alloys, electroplating, batteries, ceramics, and as a chemical catalyst (Refs. 7,57).

Cyanide forms compounds many of which are extremely poisonous (Ref. 7).

2,4,6-trichlorophenol is an irritant and suspected human carcinogen. It is used in the production of pentachlorophenol and in the manufacture of germicides, fungicides, glue, and wood preservatives. It is also used as an antimildew treatment for textiles (Ref. 7).

Phenol is a poison and a potential carcinogen. Phenol is used as a general disinfectant and in the manufacturing of many medical and industrial organic compounds and dyes. (Ref. 7).

Toluene is an irritant and it affects the central nervous system. It is obtained from coal tar or petroleum and is used as a lacquer solvent, in the manufacturing of explosives, and as a component of high octane fuels (Ref. 7).

## 8.0 SUMMARY AND CONCLUSIONS

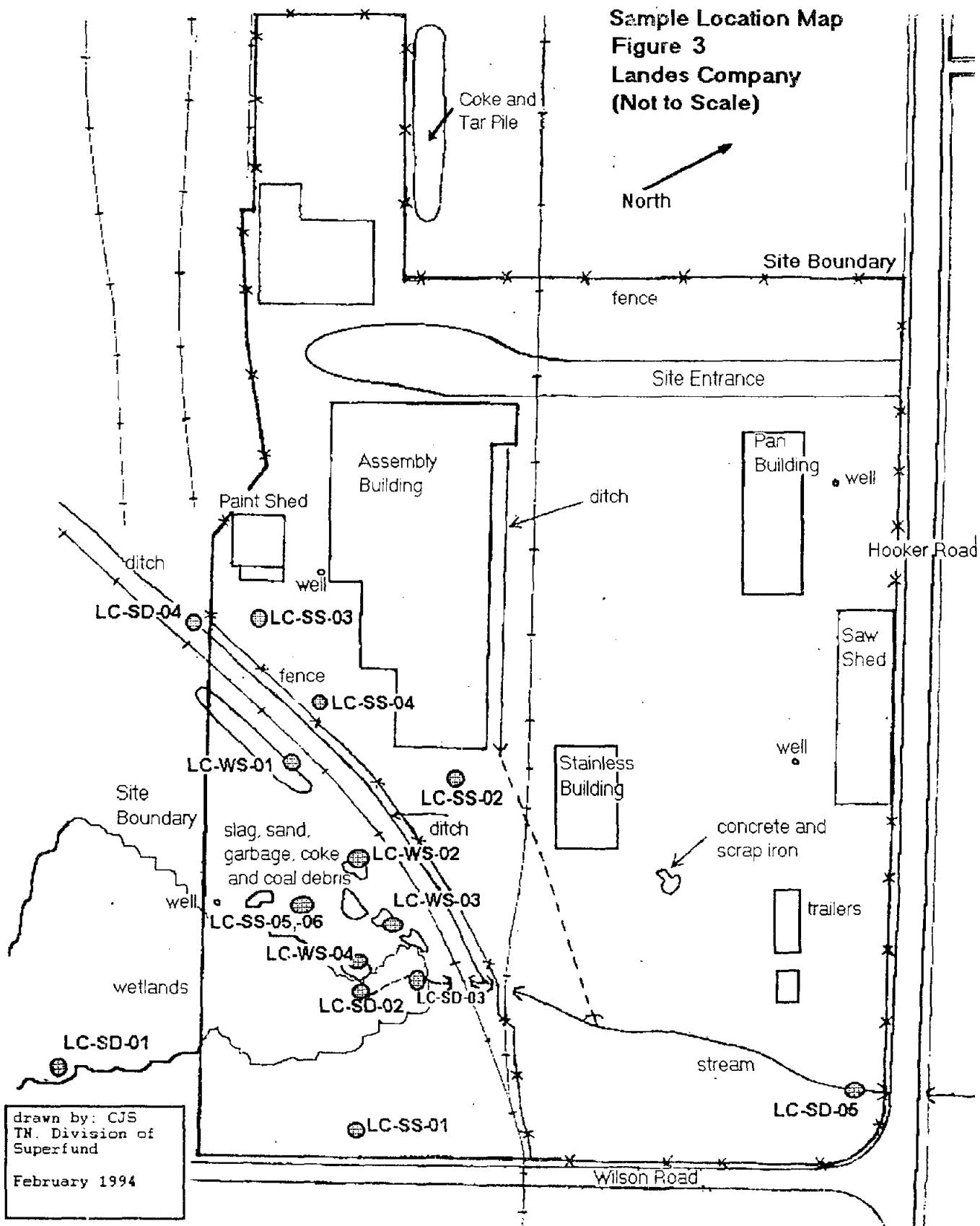
The Landes Company SI attempted to gather data necessary to evaluate the site as a candidate for the NPL. Environmental samples were collected and analyzed to characterize the types of substances found at the site and potential migration pathways. In addition, information was collected to confirm target populations and environments potentially at risk from the site.

From the early 1960s to 1991, the Landes Company site was involved in the manufacturing and rental of concrete forms and scaffolding. During this time they allegedly disposed of their solvents and paint wastes directly onto the ground at the site. The state investigated and discovered an illegal dump at the southeastern corner of the site.

The SI has identified the presence of contaminated waste, soil, and sediment at the site. The SI has identified the principal hazardous substances as PAH compounds, Cyanide, pesticides, and metals. Sediment both upgradient and downgradient of the site is contaminated with these substances. The PAHs and Cyanide in the sediment at the site and some of the metals appear to have migrated onto the site from industrial properties to the southwest. A few of the hazardous substances, mainly Bis (2-Ethylhexyl) Phthalate, Beta BHC and Delta BHC, and some of the metals, appear to have come from the Landes Company site itself.

The greatest health risk from the site appears to be by way of the human food chain exposure pathway. The site might adversely affect the small wetland at the southeast corner of the site and the Chattanooga Creek and Tennessee River fisheries. The second greatest health threat from the site appears to be to on-site workers by way of the soil exposure pathway. The threat to nearby residents and students appears to be minimal.

There appears to be almost no health risk by way of the groundwater, drinking water, and air exposure migration pathways.



# **POOR LEGIBILITY**

**PORTIONS OF THIS DOCUMENT  
MAY BE UNREADABLE, DUE TO  
THE QUALITY OF THE  
ORIGINAL**

TABLE 1: SAMPLE COLLECTION

<u>Sample Number</u>	<u>Sample Type</u>	<u>Location</u>	<u>Date</u>	<u>Time</u>
LC-SD-01	background sediment	upgradient of site in wetlands area	2/7/94	0830
LC-SD-02	sediment	near dump site in wetlands area	2/7/94	0855
LC-SD-03	sediment	downgradient of dump in wetlands	2/7/94	0910
LC-SD-04	background sediment	railroad ditch west of site	2/7/94	1015
LC-SD-05	sediment	downgradient of site, in stream channel near Hooker Road	2/7/94	1400
LC-SS-01	background surface soil	southeast corner of site in woods near Wilson Road	2/7/94	1000
LC-SS-02	surface soil	east of assembly building in oil stained soil	2/8/94	0900
LC-SS-03	surface soil	east of paint shed in oil stained soil	2/8/94	0910
LC-SS-04	surface soil	southeast of assembly building near fence along railroad track; area of no vegetation	2/8/94	0920
LC-SS-05	surface soil	dump area across railroad track from Landes Co. facility	2/7/94	1310
LC-SS-06	surface soil (duplicate)	same as LC-SS-05	2/7/94	1320
LC-WS-01	waste	waste piles in south dump	2/7/94	1040
LC-WS-02	waste	waste piles in south dump	2/7/94	1050
LC-WS-03	waste	waste piles in south dump	2/7/94	1105
LC-WS-04	waste	waste piles in south dump above LC-SD-02	2/7/94	1125

Table 2  
Analytical Results for Sediment Samples  
Organic Analysis (in parts per billion, ppb)

Landes Company (TND 003328960)  
Site Investigation, Spring 1994

<u>Compound</u>	<u>LC-SD-01</u>	<u>LC-SD-02</u>	<u>LC-SD-03</u>	<u>LC-SD-04</u>	<u>LC-SD-05</u>
Bis (2-Ethylhexyl) Phthalate	1100	900	D	D	2710000
Di-N-Butyl Phthalate	D	-	-	-	-
Diethyl Phthalate	D	D	D	-	-
Acenaphthene	-	D	-	17500	D
Acenaphthylene	-	D	D	38600	35900
Anthracene	-	D	-	71500	27700
Benzo (a) Anthracene	-	D	D	138000	113000
Benzo (a) Pyrene	-	D	D	128000	109000
Benzo (b) Fluoranthene	-	D	D	406000	215000
Benzo (ghi) Perylene	-	D	-	88000	82400
Benzo (k) Fluoranthene	-	D	D	D*	D*
Dibeno (a,h) Anthracene	-	-	-	49300	23400
Fluoranthene	D	598	D	453000	156000
Fluorene	-	D	-	41600	21700
Indeno (1,2,3-cd) Pyrene	-	-	-	102000	102000
Naphthalene	D	D	D	10900	19700
Phenanthrene	D	D	D	92200	97600
Pyrene	D	602	D	395000	147000
Chrysene	-	D	D	165000	141000
4-Bromophenylphenyl Ether	-	-	-	-	-
4-Chlorophenylphenyl Ether	-	-	-	-	-
Hexachlorobenzene	58.7	-	-	-	-
Hexachloroethane	D	-	-	-	-
1,2,4-Trichlorobenzene	-	-	-	-	D
Alpha BHC	-	-	-	1630	4000
Beta BHC	-	-	-	1580	9800
Delta BHC	-	-	-	241	1600
Gamma BHC (Lindane)	-	-	-	360	237
2,4-Dichlorophenol	-	-	-	D	-
2,4-Dimethylphenol	-	-	-	-	D
Phenol	D	D	D	D	D
2,4,6-Trichlorophenol	-	-	-	D	D
Toluene	3.3	-	-	-	-

D = compound detected, but below sample quantitation limits

\* = Benzo (b) Fluoranthene and Benzo (k) Fluoranthene measured together

- = compound not detected

Table 3  
 Analytical Results for Sediment Samples  
 Inorganic Analysis (in parts per million, ppm)

Landes Company (TND 003328960)  
 Site Investigation, Spring 1994

<u>Analyte</u>	<u>LC-SD-01</u>	<u>LC-SD-02</u>	<u>LC-SD-03</u>	<u>LC-SD-04</u>	<u>LC-SD-05</u>
Aluminum	15300	26700	18800	5040	16700
Arsenic	2.8	8.6	5.2	16.2	26.4
Barium	62	86	48	177	140
Cadmium	1.1	1.5	1.9	2.0	7.4
Calcium	614	1550	1850	2760	4530
Chromium	11	14	14	25	81
Cobalt	7	17	20	10	177
Copper	11.5	20	18.9	159	262
Iron	11700	17300	17800	13200	36300
Lead	35	32	38	215	317
Magnesium	1040	1280	1110	861	1060
Manganese	236	1470	1740	359	4740
Mercury	<0.1	<0.1	<0.1	0.81	1.26
Nickel	8	15	12	10	82
Potassium	890	1420	1190	790	1330
Selenium	0.4	0.2	<0.2	2.2	4.6
Silver	<1	<1	1	<1	<1
Sodium	62	112	36	122	256
Zinc	93.6	74	75.7	245	943
Cyanide	<1	<1	<1	2180	207.6

**Table 4**  
**Analytical Results for Soil Samples**  
**Organic Analysis (in parts per billion, ppb)**

Landes Company (TND 003328960)  
 Site Investigation, Spring 1994

<b>Compound</b>	<b>LC-SS-01</b>	<b>LC-SS-02</b>	<b>LC-SS-03</b>	<b>LC-SS-04</b>	<b>LC-SS-05</b>	<b>LC-SS-06</b>
Bis (2-Ethylhexyl) Phthalate	7730	102000	4050	29200	4470	6170
Di-N-Butyl Phthalate	D	-	-	-	-	-
Diethyl Phthalate	D	-	D	D	-	-
Acenaphthene	-	-	-	-	D	D
Acenaphthylene	-	-	-	D	5370	6050
Anthracene	D	-	-	D	6410	6320
Benzo (a) Anthracene	D	-	-	22000	11800	15200
Benzo (a) Pyrene	D	D	-	13800	13500	15900
Benzo (b) Fluoranthene	D	-	-	36900	20500	10600
Benzo (g,h,i) Perylene	D	-	585	11700	11100	13400
Benzo (k) Fluoranthene	D	-	-	D*	7900	D*
Dibenzo (a,h) Anthracene	-	-	1230	8750	5500	5000
Fluoranthene	D	-	-	26700	32600	30000
Fluorene	-	-	-	D	D	D
Indeno (1,2,3-cd) Pyrene	-	1810	728	19200	15600	16200
Naphthalene	-	D	D	D	D	D
Phenanthrone	D	-	-	5170	10900	8300
Pyrene	D	5500	-	24300	32000	30100
Chrysene	D	-	-	29400	15200	19900
4-Bromophenylphenyl Ether	D	-	-	-	-	-
4-Chlorophenylphenyl Ether	D	-	-	-	-	-
Hexachlorobenzene	-	-	-	-	D	D
Alpha BHC	-	-	-	-	295	209
Beta BHC	-	-	-	-	539	340
Delta BHC	-	-	-	-	D	D
Gamma BHC (Lindane)	-	-	-	-	102	53
Dieldrin	-	D	D	D	-	-
Heptachlor	-	-	-	D	-	-
4-Chloro-3-Methyl Phenol	-	-	D	-	-	-
2,4-Dichlorophenol	-	-	D	-	-	-
Phenol	-	D	D	-	-	-
2,4,6-Trichlorophenol	-	-	D	-	--	-
Toluene	-	-	D	D	D	-

D = compound detected, but below sample quantitation limits  
 \* = Benzo (b) Fluoranthene measured with Benzo (k) Fluoranthene  
 - = compound tested for, but not detected

**Table 5**  
**Analytical Results for Soil Samples**  
**Inorganic Analysis (in parts per million, ppm)**

Landes Company (TND 003328960)  
 Site Investigation, Spring 1994

<u>Analyte</u>	<u>LC-SS-01</u>	<u>LC-SS-02</u>	<u>LC-SS-03</u>	<u>LC-SS-04</u>	<u>LC-SS-05</u>	<u>LC-SS-06</u>
Aluminum	25400	13200	334	2200	8300	6420
Arsenic	4.4	9.4	63.1	25.1	2.4	3.9
Barium	72	111	17	115	43	44
Cadmium	1.7	3.8	12.4	7.1	1.4	2.2
Calcium	120	14100	772	278	4400	6380
Chromium	10	29	165	57	24	23
Cobalt	15	19	31	13	11	11
Copper	14.7	289	106	201	31.6	96.4
Iron	28200	14700	395000	58000	10600	8910
Lead	14	176	69	404	82	83
Magnesium	893	2060	180	192	850	771
Manganese	1480	1000	4930	599	695	770
Mercury	0.11	<0.1	<0.1	0.93	<0.1	<0.1
Nickel	11	18	176	36	8	9
Potassium	1050	1160	159	988	806	624
Selenium	<0.2	0.4	<0.2	0.4	0.3	0.3
Silver	<1	<1	<1	<1	<1	<1
Sodium	<10	104	394	2770	94	59
Zinc	50.6	355	558	68.4	75.2	70.8
Cyanide	<1	1.1	<1	461.9	5.1	4.5

**Table 6**  
**Analytical Results for Waste Pile Samples**  
**Organic Analysis (in parts per billion, ppb)**

Landes Company (TND 003328960)  
 Site Investigation, Spring 1994

<b>Compound</b>	<b>LC - WS - 01</b>	<b>LC - WS - 02</b>	<b>LC - WS - 03</b>	<b>LC - WS - 04</b>
Bis (2-Ethylhexyl) Phthalate	32300	871	2910	629
Di-N-Butyl Phthalate	—	—	—	D
Diethyl Phthalate	—	D	D	D
Acenaphthene	—	—	—	D
Acenaphthylene	10600	D	D	D
Anthracene	15800	D	—	D
Benzo (a) Anthracene	44400	691	—	604
Benzo (a) Pyrene	41200	729	—	657
Benzo (b) Fluoranthene	94400	1100	—	1280
Benzo (g,h,i) Perylene	26600	669	—	501
Benzo (k) Fluoranthene	D*	D*	—	D*
Dibenzo (a,h) Anthracene	11000	—	—	—
Fluoranthene	86100	1070	—	826
Fluorene	D	D	—	D
Indeno (1,2,3-cd) Pyrene	30100	751	—	595
Naphthalene	8380	D	—	D
Phenanthrene	25500	D	D	404
Pyrene	78500	1080	—	777
Chrysene	51200	806	—	—
4-BromophenylphenylEther	—	—	—	—
4-ChlorophenylphenylEther	—	—	—	—
Hexachlorobenzene	108	—	—	—
Hexachloroethane	—	—	—	—
1,2,4-Trichlorobenzene	—	—	—	—
Alpha BHC	1680	33.8	—	D
Beta BHC	1640	25.3	—	—
Delta BHC	286	D	—	—
Gamma BHC (Lindane)	288	D	—	—
2,4-Dichlorophenol	—	—	—	—
2,4-Dimethylphenol	—	—	—	—
Phenol	—	—	—	—
2,4,6-Trichlorophenol	—	—	—	—

D = compound detected, but below sample quantitation limits

\* = Benzo (b) Fluoranthene and Benzo (k) Fluoranthene measured together

— = compound tested for, but not detected

Table 7  
Analytical Results for Waste Samples  
Inorganic Analysis (in parts per million, ppm)

Landes Company (TND 003328960)  
Site Investigation, Spring 1994

<u>Analyte</u>	<u>LC-WS-01</u>	<u>LC-WS-02</u>	<u>LC-WS-03</u>	<u>LC-WS-04</u>
Aluminum	5298	187000	36100	1210
Arsenic	18.8	1.2	28.1	4
Barium	205	14	192	50
Cadmium	2.5	1.3	41.9	1.3
Calcium	3090	2230	1840	1470
Chromium	111	11	186	18
Cobalt	13	3	32	17
Copper	65.6	11.1	13300	28.4
Iron	14800	5630	52700	26000
Lead	187	28	4190	43
Magnesium	607	386	4150	1340
Manganese	382	147	730	1380
Mercury	0.89	<0.1	0.3	<0.1
Nickel	10	4	714	15
Potassium	698	199	131	1840
Selenium	3.1	0.2	1.4	0.3
Silver	<1	<1	28	<1
Sodium	222	31	62	40
Zinc	108	20.3	14300	90.7
Cyanide	2523	<1	<1	<1

**Table 8**  
**Approximate Population Values**  
**Landes Company (TND 003328960)**  
**Site Investigation, Spring 1994**

<u>Distance from site</u>	<u>Population</u>
0 to 1/4 mile	624
1/4 to 1/2 mile	1,876
1/2 to 1 mile	7,501
1 to 2 miles	30,003
2 to 3 miles	50,004
3 to 4 miles	70,000

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50. TDSF. 1994. "Field Log Book for the Landes Company SI". February 7 and 8.
51. TDSF. 1994. "Photographs for the Landes Company SI Field Sampling Excursion". February 7 and 8.
52. TDSF. 1994. "SI Analytical Data Sheets for the Landes Company SI". February 7 and 8.
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54. TDSF. 1993. "Preliminary Assessment, Landes Company, TND 003328960". April 28.

55. U.S. Federal Register, Environmental Protection Agency, 40CFR Part 300. 1990. "Hazard Ranking System". December 14.
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Site No. TND 003328960  
Appendix A

References

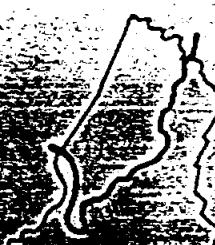
Site No. TND 003328960  
Ref. No. 1

# **PLANNING DISTRICT SOUTH CENTER CITY 2**

#23 - Morgan St.

## **BASIC INFORMATION**

CHATTANOOGA-HAMILTON COUNTY, TENNESSEE



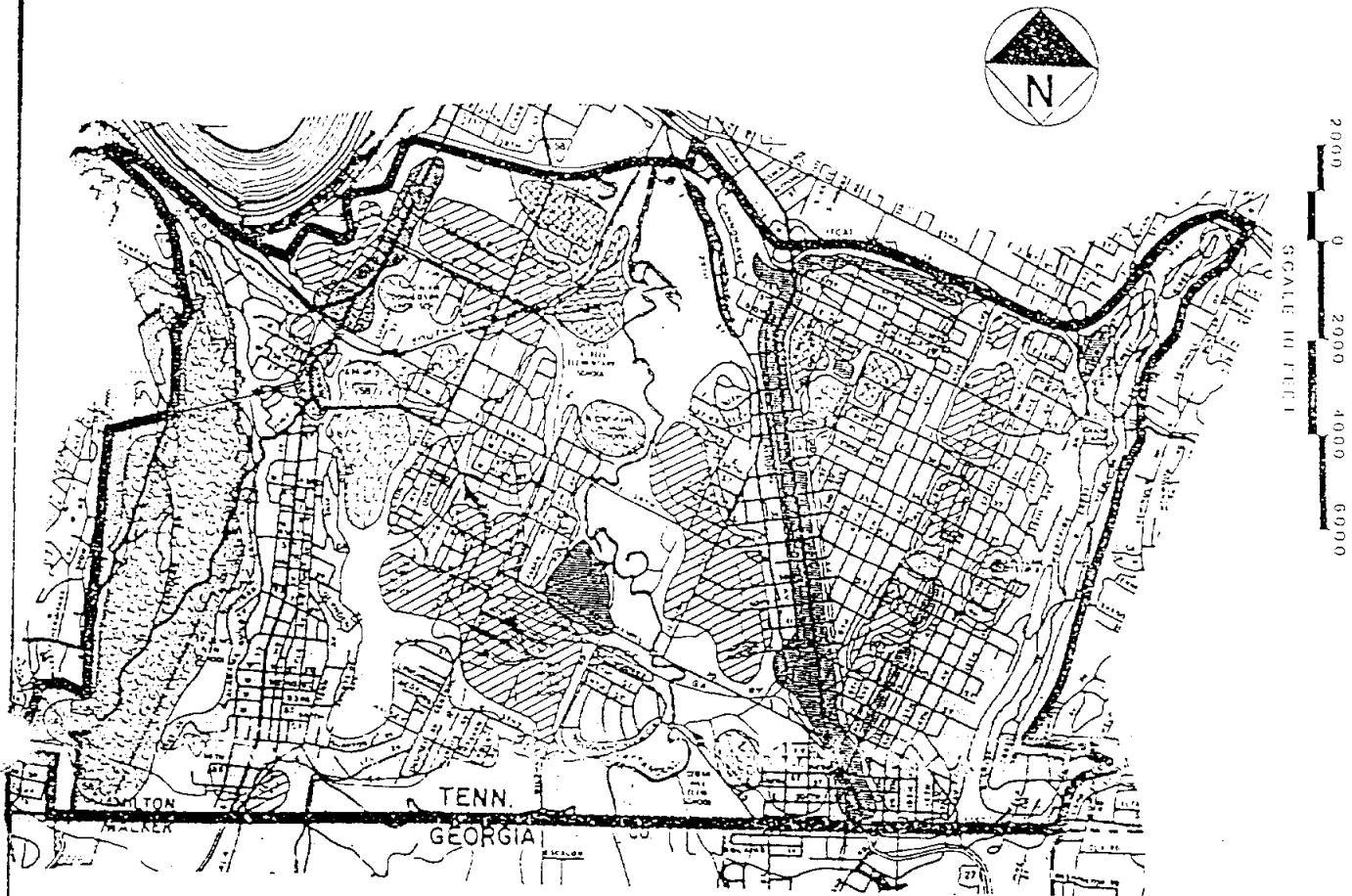
REGIONAL PLANNING COMMISSION

LAND USE CHANGES (ACREAGE)

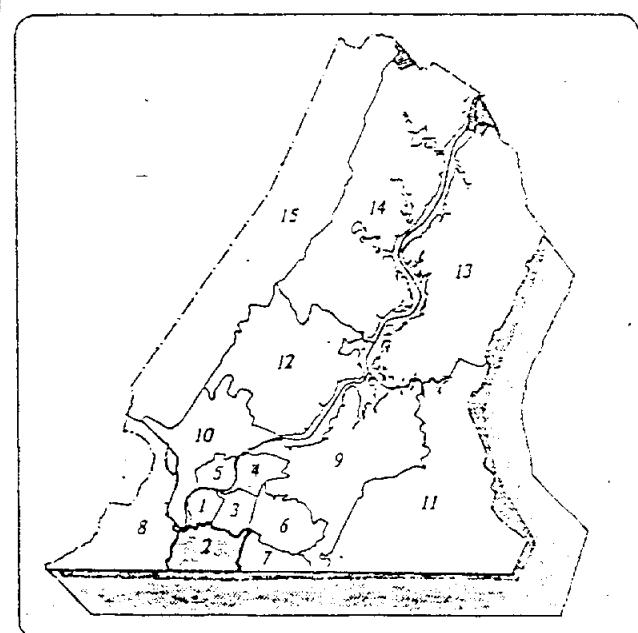
Land Use	Tract 18			Tract 19		
	1985 Acres	1972 %	1985 %	1985 Acres	1972 %	1985 %
Residential	388.4	22.1	22.6	335.2	18.1	18.7
Single-Family	346.7	21.4	20.2	212.4	11.8	11.8
Duplexes	26.3	.4	1.5	68.4	3.2	3.8
Multi-Family	12.7	.2	.7	52.9	3.0	2.9
Residential Parking	.0	-	-	.0	-	-
Trailers	.4	-	-	.8	-	-
Vacant	2.3	.1	.1	.7	.1	-
Industrial	42.9	2.2	2.5	275.9	12.1	15.4
Commercial	26.5	.9	1.5	174.3	3.7	9.7
Institutional	104.9	10.2	6.1	45.4	2.2	2.5
Recreation	345.5	.5	20.1	12.8	.7	.7
Transportation Communication and Utilities	15.4	1.0	.9	233.6	12.8	13.0
Agriculture	.0	-	-	2.9	-	.2
Streets	223.0	14.5	13.0	201.5	11.4	11.2
Vacant	573.6	48.7	33.3	479.0	37.0	26.7
Water	.0	-	-	35.0	1.8	1.9
TOTAL	1,720.2	100.0	100.0	1,795.6	100.0	100.0

# PLANNING DISTRICT 2

## EXISTING LAND USE



## SOUTH CENTER CITY



### Legend :

- [Solid white square] RESIDENTIAL
- [Solid black square] COMMERCIAL
- [Diagonal hatching] INDUSTRIAL
- [Dotted pattern] PUBLIC/SEMI-PUBLIC
- [Cross-hatching] TRANSPORTATION
- [Empty square] VACANT

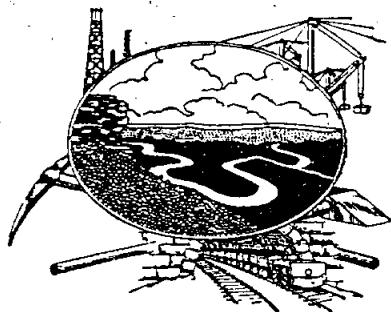
Site No. TND 003328960  
Ref. No. 2

State of Tennessee  
DEPARTMENT OF CONSERVATION  
DIVISION OF GEOLOGY

BULLETIN 58  
PART I

GROUND-WATER RESOURCES OF  
EAST TENNESSEE

By  
**G. D. DeBUCHANANNE**  
and  
**R. M. RICHARDSON**



Prepared in cooperation with the U. S. Geological Survey

NASHVILLE, TENNESSEE

1956

grained conglomerate. Locally, white sandstone occurs as layers interbedded with maroon sandstone and siltstone. In some areas, beds of yellow limy shale and siltstone occur near the base. The Bays formation weathers to a shallow maroon soil that is limy and fertile where the rocks are calcareous, and to a thin sandy soil over sandstone.

The Bays formation is not considered a good aquifer. Ground water occurs only in fractures in the rocks. The sandstone is not thick or permeable enough to yield much water. The silty nature of this formation tends to limit enlargement of fractures by solution so that only small quantities of water are available. The quality of the water is generally good. However, the hardness is usually more than 100 ppm.

#### UPPER ORDOVICIAN SERIES

##### *Upper part of the Chickamauga limestone*

The upper part of the Chickamauga limestone consists of 700 to 1,000 feet of dark-blue to gray well-bedded or platy to nodular limestone with interbedded shaly partings. A few thin beds of volcanic ash are found near the base of the formation, which is silty or sandy. There are many fossil horizons in this formation.

Ground water occurs in these rocks in fractures. Many small-yield springs are found, but they are of no importance for industrial or municipal water supplies. Some of the purer limestone members give rise to springs yielding more than 100 gpm. Wells drilled into these rocks usually yield domestic supplies, but rarely more than 10 gpm. The water is generally hard.

##### *Unit 4 of Chickamauga limestone*

Unit 4 of the Chickamauga limestone consists of 350 to 600 feet of dark-blue to gray bedded or platy to nodular limestone, commonly interbedded with thin shale partings. Volcanic-ash beds are present near the base of this unit, which is usually silty or sandy. Unit 4 weathers to form a rich clay soil, through which the rock crops out locally.

Ground water occurs in this unit in the same way that it does in the upper part of the Chickamauga limestone. Although most springs in this unit are small, there are some large ones. The yield of wells drilled in this unit is dependent upon the number and size of the fractures encountered; the average yield is less than 30 gpm. The chemical quality of water is good except for the hardness which usually exceeds 150 ppm.

##### *Reedsville shale*

The Reedsville shale consists of 250 to 400 feet of greenish, yellow-weathering calcareous shale with beds of dark limestone and layers of silty shale and calcareous siltstone. This formation, which has been

mapped only where is equivalent in age

The Reedsville The springs that is usually have flows o supplies have been developed. However developed near strea

##### *Martinsburg shale*

The Martinsbur bluish, yellow-weath grained limestone o Layers of silty shale the middle of the near the base of t a layer or two of produce a thin and s

Ground-water o shale as in the Reed developed from the Sequatchie and junc

The Sequatchie of red and maroon and the boundary careous in the sout is used, the format laceous limestone. careous maroon sha formations usually

Ground water in not been enlarged i tion supply domesti duce only small q water from this for

L

##### *Silurian sandstones*

In parts of East done to differentiat mapped as Silurian

were folded and faulted. The original porosity of the sandstone and other clastic rocks has been destroyed by the deposition of silica and calcium carbonate. In the sandstone and shale that underlie the Cumberland Plateau the fractures are generally small and discontinuous; hence, the yield of wells drilled in these rocks is generally quite small, seldom exceeding a few gallons per minute.

Fractures in the limestone and dolomite which underlie large areas of the Valley and Ridge portion of the county have generally been enlarged by the solvent effect of percolating ground water. The yield of wells drilled in such rocks may be quite high. However, as the distribution of fractures in limestone and dolomite is quite erratic, it is impossible to determine, before drilling, what the yield of a well will be.

Analysis of records of wells drilled in the Chattanooga area and elsewhere in East Tennessee indicates that wells that yield 100 gpm or more are generally located near permanent surface streams. Although wells away from streams occasionally yield large quantities of water, such instances are by no means common.

The yields of wells drilled in shales, such as those of the Conasauga group, are generally low. However, where water-bearing cavities developed in limestone lenses in the shale are encountered, wells may yield up to 100 gpm.

The municipal water supply of Chattanooga is derived from the Tennessee River. Several utility districts on the outskirts of Chattanooga have developed springs. There are numerous springs, some of large size, in the parts of the county underlain by formations of the Knox group.

TABLE 35.—DISCHARGE MEASUREMENTS OF SELECTED SPRINGS IN HAMILTON COUNTY

Spring	Location	Date of measurement	Discharge (gpm)	Temperature (°F.)		Remarks
				Air	Water	
Anderson (no. 180-S)	5 miles southwest of Georgetown	4/15/31	4,640	74	58	Clear
		6/13/31	767	..	..	Do.
		11/2/31	458	62	58	Do.
		6/20/50	2,108	90	60	Do.
		7/18/50	1,608	85	59	Do.
		8/2/50	4,738	85	59	Do.
		9/13/50	7,009	85	59	.....
		10/17/50	1,894	71	59	Clear
		11/15/50	1,883	48	58	.....
		12/20/50	3,736	33	57	.....
		1/19/51	4,792	55	58	.....
		2/15/51	4,974	49	58	.....
		3/13/51	6,183	38	58	.....
		4/17/51	5,756	46	59	.....
		5/16/51	2,345	75	59	.....
		6/20/51	1,936	73	60	.....

Site No. TND 003328960  
Ref. No. 3

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**  
**FLOOD INSURANCE RATE MAP**

Enclosure 9 (N 11/82)

CITY OF  
**CHATTANOOGA,**  
TENNESSEE  
HAMILTON COUNTY

**PANEL 26 OF 30**

(SEE MAP INDEX FOR PANELS NOT PRINTED)

**COMMUNITY-PANEL NUMBER**  
**470072 0026 A**

**EFFECTIVE DATE:**  
**SEPTEMBER 3, 1980**

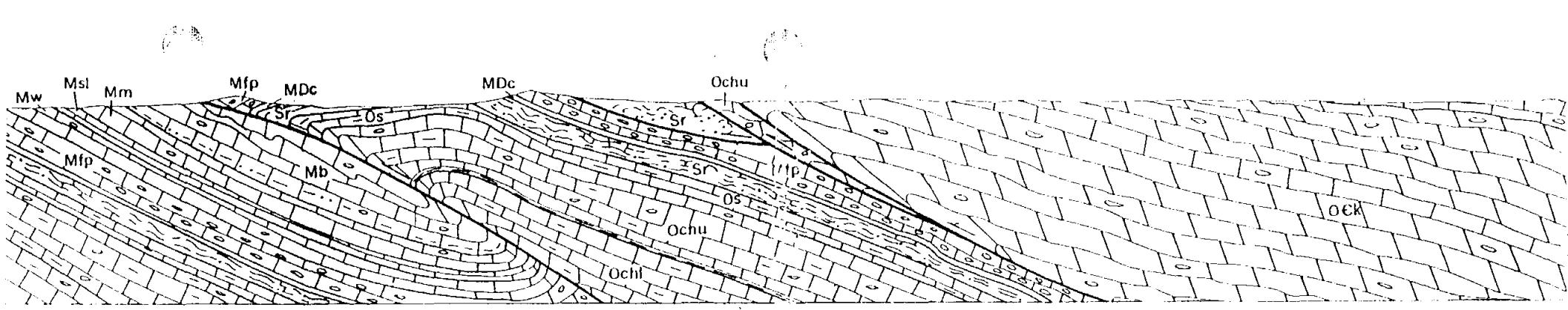


**U.S. DEPARTMENT OF HOUSING  
AND URBAN DEVELOPMENT  
FEDERAL INSURANCE ADMINISTRATION**

## **POOR LEGIBILITY**

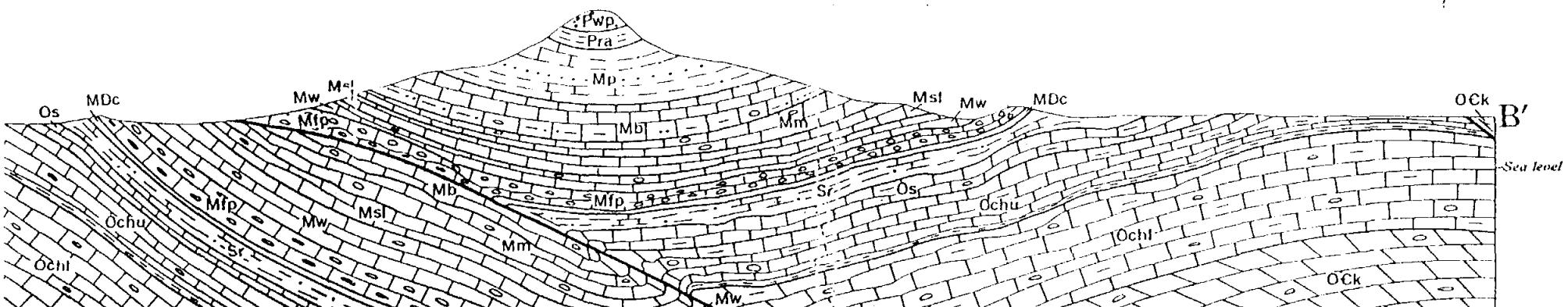
**PORTIONS OF THIS DOCUMENT  
MAY BE UNREADABLE, DUE TO  
THE QUALITY OF THE  
ORIGINAL**

Site No. TND 003328960  
Ref. No. 4



SECTION ALONG A-A'

No vertical exaggeration



SECTION ALONG B-B'

No vertical exaggeration

## GEOLOGIC MAP OF THE CHATTANOOGA QUADRANGLE, TENNESSEE

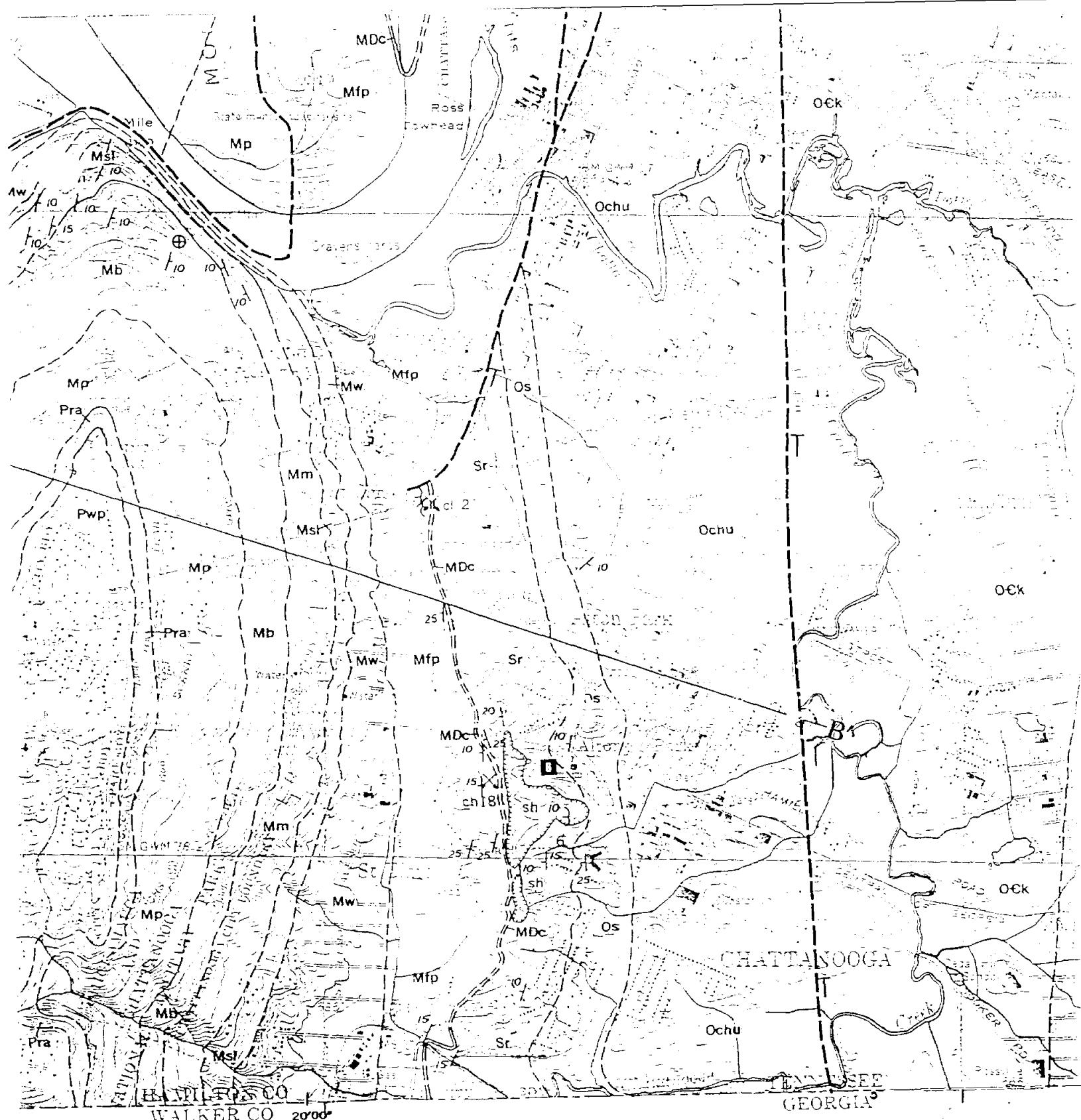
(*Including the Tennessee portion of the Fort Oglethorpe Quadrangle, Georgia-Tennessee*)

By

C. Pratt Finlayson, Robert H. Barnes, John M. Colvin, Jr.,

and Edward T. Luther

1964



SCALE 1:24 000

CONTOUR INTERVAL 20 FEET  
DASHED LINES REPRESENT HALF-INTERVAL CONTOURS  
DATUM IS MEAN SEA LEVEL

APPROXIMATE MEAN  
DECLINATION 1963

Mdc

Mst

Mfp Mdc

Mdc

Ochu

MDc

### Chattanooga Shale

Shale, bituminous, brownish-black (weathers yellowish-orange to brown), fissile. Thickness about 20 feet.

Sr

### Rockwood Formation

Shale, reddish to yellowish-orange, with thin beds of siltstone and sandstone. Thin layers and lenses of hematite in upper part. Thickness about 200 feet.

Os

### Sequatchie Formation

Limestone, typically silty and argillaceous, mottled red and green, thin- to medium-bedded. Thickness about 200 feet.

Ochu
Ochl

### Chickamauga Limestone

Upper part (Ochu) is limestone, light-gray to gray, fine- to medium-grained, thin- to medium-bedded, with very minor chert. Thickness about 500 feet.

Lower part (Ochl) consists of about 4 feet of bentonite at top, underlain by limestone, light-gray to gray, fine- to coarse-grained, thin- to thick-bedded, and minor dark blocky chert. Thickness about 1,000 feet.

OEk

### Knox Group, Undifferentiated

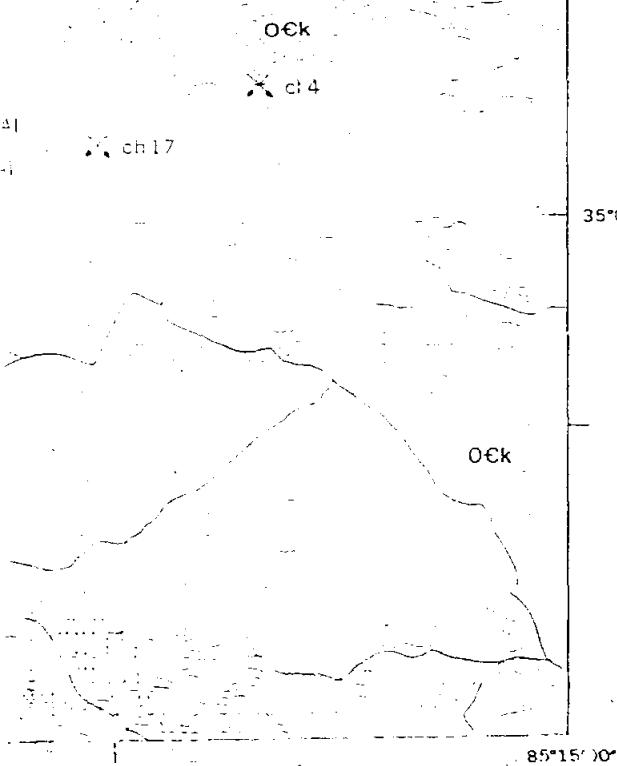
Dolomite, very siliceous, light- to dark-gray, fine- to coarse-grained, thin- to very thick-bedded, weathers to cherty rubble; minor gray, fine-grained limestone, chiefly in upper part. Thickness about 2,600 feet.

DEVONIAN  
and  
MISSISSIPPIAN

SILURIAN

ORDOVICIAN

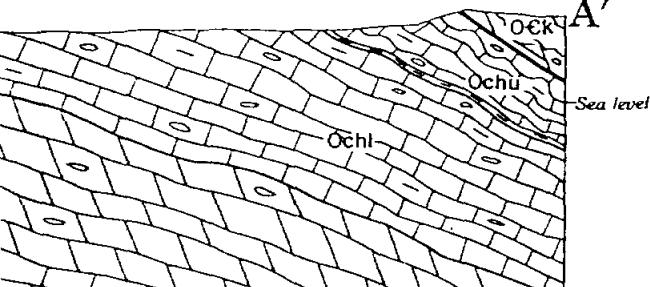
CAMBRIAN  
and  
ORDOVICIAN



Geology by C. Pratt Finlayson, Robert H. Barnes, John M. Colvin, Jr., and Edward T. Luther, assisted by John W. Jewell and Robert H. Carpenter.  
Mineral resources mapped by Robert C. Milici.  
Map preparation and editing by Donald S. Fullerton and Robert J. Floyd.

PRINTED BY ARMY MAP SERVICE. CORPS OF ENGINEERS. 97800

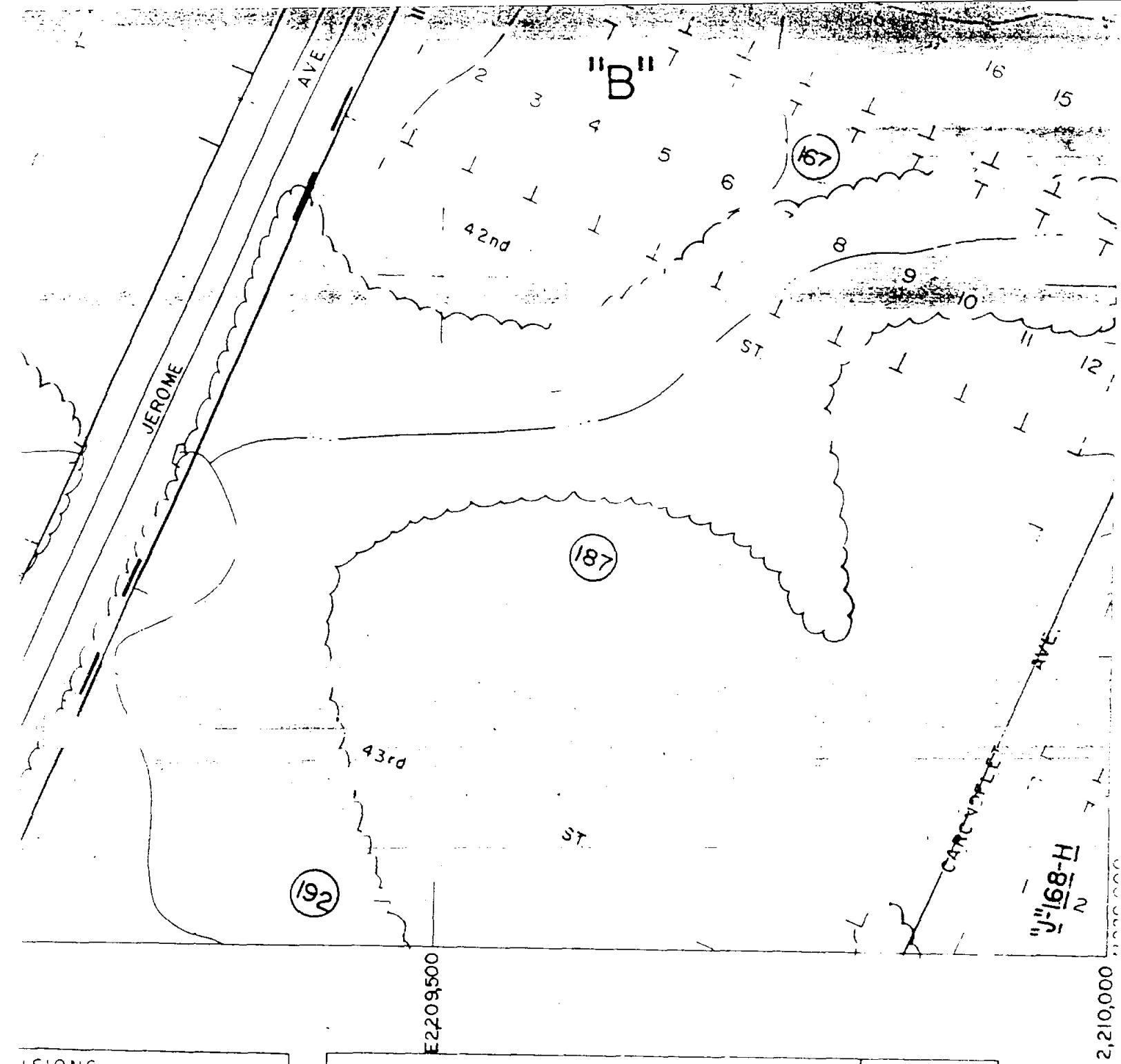
A'



- Contact, dashed where approximate
- Fault, dashed where approximately located, on upper plate of thrust fault
- Thrust fault, arrow indicates relative movement (shown in cross section only)
- (K) Klippe
- Strike and dip of beds
  - Normal
  - Horizontal
  - Beds dipping less than 5°
- Generalized strike and dip of crumpled or undulated beds
- Anticline showing trace and direction of plunge of axial plane
- Active pit Al Aluminum (Bauxite)
- Abandoned pit ch Chert
- Abandoned quarry or pit cl Clay
- Abandoned quarry ly Lyon

Site No. TND 003328960  
Ref. No. 5





ITIONS -	
1980	27 FEB / 87
31	26 JAN 1988
JULY 1982	17 / MAY / 88
JULY 1983	14
JULY 1984	15

CHATTANOOGA HAMILTON COUNTY		MAP N°
SCALE. 1"=100'	DISTRICT 1	167-E
DATE OF FLYING. JAN., 1967		
DATE COMPILED JULY, 1967		

33-633

Site No. TND 003328960  
Ref. No. 6

A.M. entered in Note Book No 41 Page 178 and recorded in Book 963 Page 10

Witness my hand at office in Chattanooga, Tenn.

Register  
Dept Reg

State of Tennessee

Department of State I, Joe C. Carr, Secretary of State of the State of Tennessee, do hereby certify that the annexed Instrument with Certificate of Acknowledgment was filed in my office and recorded on the 23rd day of December 1947 in Corporation Record Book P-30 page 183.

In Testimony Whereof I have hereunto subscribed my Official Signature

the Governor affixed the Great Seal of the State of Tennessee at the City of Nashville, this 23rd day of December A.D. 1947.

The Great Seal of the State of Tennessee x  
Agriculture--Commerce--XVI--1796

Joe C. Carr,  
Secretary of

AMEND. TO ART. OF  
INC. → Aligner Clamp  
COMP. NAME CHANGED  
TO CONC. FORMS CORP.

AMENDMENT TO ARTICLES OF INCORPORATION OF THE  
ALIGNER CLAMP COMPANY

Pursuant to a resolution this day adopted by the stockholders of the Aligner Clamp Company, which said Charter was dated June 9, 1947 and recorded in Corporation Record Book Miscellaneous A-5 Page 121 Office of the Secretary of State of the State of Tennessee and also recorded in Volume 1, page --- of the Register's Office of Hamilton County, Tennessee, which resolution is as follows:

"The name of this corporation is hereby changed from the Aligner Clamp Company to the 'Concrete Forms Corporation' and said corporation will hereafter be known and operated under the name and title of 'Concrete Forms Corporation'.

W. R. P. Purse, Jr. and Ashley A. Purse, President and Secretary respectively of the Aligner Clamp Company a corporation, chartered and organized under the laws of the State of Tennessee, hereby certify that at a special meeting of the stockholders of said corporation properly called and held at the office of said corporation in the City of Chattanooga, Hamilton County, Tennessee, the above resolution in writing was adopted by an affirmative of the stockholders, representing all of the issued shares of stock, denoting the desire of the stockholders to adopt the foregoing resolution for changing the name of said corporation.

1947

Witnesses sign at office in Chattanooga, Tenn.

*9 October* October  
Dept. 1000

State of Tennessee

Department of State I, Joe C. Carr, Secretary of State of the State of Tennessee, do hereby certify that the annexed Instrument with Certificate of Acknowledgment was filed in my office and recorded on the 29th day of December 1947 in Corporation Record Book P-30 page 189.

In Testimony Whereof, I have hereunto subscribed my Official Signature and by order of the Governor affixed the Great Seal of the State of Tennessee at the Department in the City of Nashville, this 29th day of December A. D. 1947.

**AMENDMENT TO CHARTER OF INCORPORATION  
CHATTANOOGA GARAGE**

At a meeting of the Board of Directors of CHATTANOOGA GARAGE duly held at the office of said corporation in Chattanooga, Tennessee, on the 12th day of December 1947 the following resolution was adopted:

RESOLVED by the Board of Directors of Chattanooga Garage that it is advisable for the company to amend its Charter so as to change the authorized capital stock to be one thousand (1,000) shares of Common Stock of par value of One Hundred Dollars (\$100.00) each; and a meeting of the stockholders of this company is hereby called to be held in the office of the company at 11:00 o'clock A.M. December 17, 1947 for the purpose of considering said amendment to the Charter of Incorporation.

We, Tom C. Foust and A. W. Crayne the President & Secretary respectively of CHATTANOOGA GARAGE a corporation chartered and organized under the Laws of the State of Tennessee, in pursuance to directions from the Directors of the corporation, hereby certify that at a meeting of the stockholders of said corporation, legally called and held at the office of the said corporation in the City of Chattanooga pursuant to the above resolution of said Board of Directors, a resolution in writing was adopted by an affirmative vote of the

This instrument prepared by:  
 William F. Searle, III, Attorney  
 800 Burwell Building  
 Knoxville, Tennessee 37902

WARRANTY DEED

THIS INDENTURE, made this 30th day of June, 1989,  
 between

CFC FABRICATION CORPORATION, a Tennessee corporation  
 and THE LANDES COMPANY, INC., a Tennessee corporation,

First Parties, and

FMC ACQUISITION CORPORATION, a Tennessee corporation,  
 Second Party,

WITNESSETH: that said First Parties, for and in consideration of the sum of TEN DOLLARS (\$10.00) cash and other good and valuable considerations to it in hand paid by Second Party, the receipt and sufficiency of which is hereby acknowledged, have granted, bargained, sold and conveyed and do hereby grant bargain, sell and convey unto the said Second Party the following described premises:

All that tract or parcel of land lying and being in the City of Chattanooga, Hamilton County, Tennessee, and being more particularly described as follows:

BEGINNING at the point of intersection of the southern line of Hamill Road (also known as Hooker Road), 50 feet in width, with the western line of Hooker Road (50 feet in width); thence along the western line of Hooker Road South 22 deg. 03 min. West 768.36 feet to a concrete monument with a chiseled "X" at fence corner, and being the southeast corner of property conveyed by Louisville and Nashville Railroad Company to Concrete Forms Corporation, by Deed recorded in Book 1665, page 345, in the Register's Office of Hamilton County, Tennessee; thence with and along the generally southern boundary line of the property conveyed by the last mentioned Deed, North 68 deg. 22 min. West, 738.31 feet, North 30 deg. 04 min. West, 98.55 feet, North 74 deg. 19 min. West, 131.86 feet, North 70 deg. 57 min. West 173.85 feet, North 23 deg. 12 min. East, 15.94 feet, and North 67 deg. 39 min. West, 227.95 feet to the southwest corner of the property conveyed by Deed recorded in Book 1665, page 345, aforesaid; thence along the western line of the property conveyed by said Deed, North 22 deg. 30 min. East, 169.61 feet to the northwest corner thereof; thence along the northern line of the property conveyed by said Deed, South 67 deg. 30 min. East, 300 feet to the southwest corner of property conveyed by K. C. Fitschen and wife Marie M. Fitschen, to Concrete Forms Corporation, by Deed recorded in Book 1705, page 261, re-recorded in Book 1707, page 110, in said Register's Office; thence along the West line of the property conveyed by the last mentioned Deed, North 22 deg. 30 min. East, 559 feet to a point in the southern line of Hamill Road; thence along the southern line of Hamill Road, running South 67 deg. 36 min. East, passing the West line of Carl Drive at 100 feet, the East line of Carl Drive at 140 feet, a total distance of 1,042.68 feet to the point of beginning.

This conveyance is made subject to the following:

Taxes for 1989 which the Grantee assumes and agrees to pay when due.

Deeds of Trust recorded in Book 3549, pages 406-422 and Book 3489, pages 559-577.

Rights of others in any public roads included within the boundaries of the above described property.

BEING the same property conveyed to CPC Fabrication Corporation by Concrete Forms Corporation by Warranty Deed dated February 2, 1985, of record in Book 3443, page 624, in the Register's Office for Hamilton County, Tennessee. The Landes Company, Inc., joins in this Deed for the purpose of conveying any and all rights and interest which it may have in this property as a result of previous agreements with CPC Fabrication Corporation.

THE PREPARER OF THIS DEED MAKES NO REPRESENTATIONS AS TO THE STATUS OF THE TITLE TO THE PROPERTY DESCRIBED HEREIN. THIS DEED HAS BEEN PREPARED SOLELY FROM INFORMATION FURNISHED TO THE PREPARER WHO MAKES NO REPRESENTATION WHATSOEVER OTHER THAN THAT IT HAS BEEN ACCURATELY TRANSCRIBED FROM THE INFORMATION PROVIDED.

TOGETHER with the hereditaments and appurtenances thereto appertaining releasing all claims therein.

TO HAVE AND TO HOLD the said premises to the said Second Party in fee simple forever.

AND said First Party for itself and for its successors in interest does hereby covenant with the said Second Party, its successors and assigns, that it is lawfully seized in fee simple of the premises above conveyed and has full power, authority and right to convey the same and that said premises are free from all encumbrances except as set forth herein, and that it will forever warrant and defend the said premises and the title thereto against the lawful claims of all persons whomsoever.

In this instrument in every case the plural shall include the singular and vice-versa and each gender the others.

IN WITNESS WHEREOF, this instrument has been executed on behalf of First Party by its duly authorized officer on the day and year first above written.

CPC FABRICATION CORPORATION, a  
Tennessee corporation

BY: H. C. Shook  
Duly authorized corporate officer

Title: President

THE LANDES COMPANY, INC., a  
Tennessee corporation

BY: Ronald H. Landes  
Duly authorized corporate officer

Title: President

STATE OF TENNESSEE  
COUNTY OF HAMILTON

Personally appeared before me, the undersigned authority, a Notary Public in and for said county and in said state, H. C. Shook, with whom I am personally acquainted, and who, upon oath, acknowledged himself to be the President of CPC Fabrication Corporation, the within named bargainer, a corporation, and that he as such officer, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself as Secretary.

Witness my hand and official seal at office, this 10<sup>th</sup> day of June, 1989.

My Comm. exp: 11-9-91

Notary Public

STATE OF TENNESSEE  
COUNTY OF HAMILTON

Personally appeared before me, the undersigned authority, a Notary Public in and for said county and in said state, Russell W. Landes, with whom I am personally acquainted, and who, upon oath, acknowledged himself to be the President of The Landes Company, Inc., the within named bargainer, a corporation, and that he as such Officer, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as Officer.

Witness my hand and official seal at office, this 30 day of June, 1989.

My Com. exp: 11-9-91

Notary Public

TGW Map #

167F-F-5, 167F-F-7, 167F-F-  
167F-F-9, + 169F-F-10

Name and address of property owner:

FMC Acquisition Corporation

P.O. Box 158

Knoxville, TN 37901

who is responsible for payment of taxes.

I hereby swear or affirm that the actual consideration or true value of this transfer, whichever is greater, is \$200,000.00.

Subscribed and sworn to before me, this 30 day of June, 1989.

My Com. exp: 11-9-91

Notary Public

J 3 3 8 4

IDENTIFICATION  
REFERENCE

Jun 30 3:53 PM '89

SARAH P. DE FRIESE  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

	06/30/89	CONV	200,000.00	12.00	
	06/30/89	W/DO		660.00	
	06/30/89	CTAX		.50	
	06/30/89	PFEE			**672.50

LAWYERS TITLE AND ESCROW, INC.

DOME BUILDING

736 Georgia Avenue

Chattanooga, TN 37402

(812) 756-4164

MAIL

199, Room, February William

8th Floor, Blue Cross Bldg.

Cliff, Jan. 33902

Attn: Howard S. Hale

FILE NO. 88-T014

## WARRANTY DEED

Prepared by:  
ROBERT L. BROWN, Attorney

100 Dome Building

736 Georgia Avenue

Chattanooga, TN 37402

BOOK 3448 PAGE 624

DATE: FEBRUARY 2, 1978

THIS INDENTURE DATED THIS

CONCRETE FORMS CORPORATION.

as party or parties of the first part, hereinafter called Grantor, and

CFC FABRICATION CORPORATION,

as party or parties of the second part, hereinafter called Grantee (the words "Grantor" and "Grantee" to include the parties named herein and their respective heirs, successors and assigns);

WITNESSETH that Grantor, for and in consideration of the sum of One Dollar and other good and valuable considerations, the receipt whereof is hereby acknowledged, does hereby convey to Grantee in fee simple, the following described property:

All that tract or parcel of land lying and being in the City of Chattanooga, Hamilton County, Tennessee and being more particularly described as follows:

BEGINNING at the point of intersection of the Southern line of Hamill Road (also known as Hooker Road), 50 feet in width, with the Western line of Hooker Road (50 feet in width); thence along the western line of Hooker Road South 22 degrees 03 minutes West 768.36 feet to a concrete monument with a chiseled "X" at fence corner, and being the Southeast corner of property conveyed by Louisville and Nashville Railroad Company to Concrete Forms Corporation, by Deed recorded in Book 1665, Page 345, in the Register's Office of Hamilton County, Tennessee; thence with and along the generally Southern boundary line of the property conveyed by the last mentioned Deed, North 68 degrees 22 minutes West 738.31 feet, North 30 degrees 04 minutes West 98.55 feet, North 74 degrees 19 minutes West 131.86 feet, North 70 degrees 57 minutes West 173.85 feet, North 23 degrees 12 minutes East 15.94 feet, and North 67 degrees 39 minutes West 227.95 feet to the Southwest corner of the property conveyed by Deed recorded in Book 1665, Page 345, aforesaid; thence along the Western line of the property conveyed by said Deed, North 22 degrees 30 minutes East 169.61 feet to the Northwest corner thereof; thence along the Northern line of the property conveyed by said Deed, South 67 degrees 30 minutes East 300 feet to the Southwest corner of property conveyed by K. C. Fitschen and wife, Marie M. Fitschen, to Concrete Forms Corporation, by Deed recorded in Book 1705, Page 261, re-recorded in Book 1707, Page 110, in said Register's Office; thence along the West line of the property conveyed by the last mentioned Deed, North 22 degrees 30 minutes East 359 feet to a point in the Southern line of Hamill Road; thence along the Southern line of Hamill Road, running South 67 degrees 36 minutes East, passing the West line of Carl Drive at 100 feet, the East line of Carl Drive at 140 feet, a total distance of 1,042.68 feet to the point of beginning.

Being the same property conveyed by Deed recorded in Book 2896, Page 237 in the Register's Office, Hamilton County, Tennessee.

This conveyance is made subject to the following:

Taxes for 1988 which the Grantee assumes and agrees to pay when due.

Deed of Trust recorded in Book 2876, Page 229 as amended in Book 2997, Page 850 said Register's Office.

Rights of others in any public roads included within the boundaries of the above described property.

Address of Grantee	Map Tax Number	Map Parcel No.
CFC FABRICATION CORPORATION P.O. Box 158 304 WALL AVENUE KNOXVILLE, TN. 37902	GRANTEE	167P-7-5 167P-7-7 167P-7-8 167P-7-9

TO HAVE AND TO HOLD said property and all rights appurtenant thereto, to Grantee forever in FEE SIMPLE.  
 Grantor warrants that Grantor is lawfully seized and possessed of said property, has full power and lawful authority to convey same, that Grantor's title is marketable, clear, free and unencumbered except as set forth herein, and that Grantor will forever defend the right and title to said property unto Grantee against the claims of all persons whomsoever.

IN WITNESS WHEREOF, Grantor has signed and sealed this Deed the day and year above written.

CONCRETE FORKS CORPORATION

BY:

*Deborah Dillinger*

B. 245.1

IDENTIFICATION  
REFERENCE

FEB 4 3 56 PM '88

SARAH P. DE FRIES  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

02/04/88	COPY	100.00
02/04/88	W/DC	6.00
02/04/88	STAX	290.00
02/04/88	PPFE	.33
		4423.50

STATE OF \_\_\_\_\_ COUNTY OF \_\_\_\_\_

Before me, the undersigned Notary Public of the state and county aforesaid, personally appeared the within named bargainer, with whom I am personally acquainted, or proved to me on the basis of satisfactory evidence, and who acknowledged that \_\_\_\_\_ executed the within instrument for the purposes therein contained.

WITNESS my hand, at office, this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

Date of Expiration of Commission \_\_\_\_\_

Notary Public

(SEAL)

STATE OF TENNESSEE

COUNTY OF HAMILTON

Before me, the undersigned Notary Public of the state and county aforesaid, personally appeared David C. Hargan, with whom I am personally acquainted, or proved to me on the basis of satisfactory evidence, and who, upon oath, acknowledged himself to be the PRESIDENT of the Concrete Forks Corporation, the within named bargainer, a corporation, and that he as such officer, executed the foregoing instrument for the purpose therein contained, by signing the name of the corporation by himself as such officer.

WITNESS my hand, at office, this 2nd day of February, 1988

Date of Expiration of Commission: 8-7-91

Notary Public

STATE OF TENNESSEE

COUNTY OF HAMILTON

The undersigned Grantee hereby swears or affirms that the actual consideration for this transfer, or value of the property transferred, whichever is greater, is \$ 100,000 which amount is equal to or greater than the amount which the property transferred would command at a fair and voluntary sale.

CPC FABRICATION CORPORATION

BY:

*Deborah Dillinger*

Signed and sworn to or affirmed before me on this the 2nd day of February, 1988

Date of Expiration of Commission

8-7-91

Notary Public

Book 2896 page 237

EXHIBIT A  
1983  
FED. TAX CREDITS  
PROPERTY  
TENNESSEE DEED OF TRUST  
TO  
FROM  
CONCRETE FORMS CORPORATION

RECODER'S MEMO  
Legibility of writing, typing or printing in this  
document unsatisfactory when received.

IN THE CITY OF CHATTANOOGA, HAMILTON COUNTY, TENNESSEE: Beginning at the point of intersection of the Southern line of Hamill Road (also known as Hooker Road), 50 feet in width, with the Western line of Hooker Road (50 feet in width); thence along the Western line of Hooker Road South 22 degrees 03 minutes West 768.16 feet to a concrete monument with a chiseled "X" at fence corner, and being the Southeast corner of property conveyed by Louisville and Nashville Railroad Company to Concrete Forms Corporation, by Deed recorded in Book 1665, page 345, in the Register's Office of Hamilton County, Tennessee; thence with and along the generally Southern boundary line of the property conveyed by the last mentioned Deed, North 68 degrees 22 minutes West 738.31 feet, North 30 degrees 04 minutes West 98.55 feet, North 74 degrees 19 minutes West 111.86 feet, North 70 degrees 57 minutes West 173.85 feet, North 23 degrees 12 minutes East 15.94 feet, and North 67 degrees 39 minutes West 227.95 feet to the Southwest corner of the property conveyed by Deed recorded in Book 1665, page 345, aforesaid; thence along the Western line of the property conveyed by said Deed, North 22 degrees 30 minutes East 169.61 feet to the Northwest corner thereof; thence along the Northern line of the property conveyed by said Deed, South 57 degrees 30 minutes East 340 feet to the Southwest corner of property conveyed by K. C. Fischchen and wife, Maria M. Fischchen, to Concrete Forms Corporation, by Deed recorded in Book 1705, page 261, re-recorded in Book 1707, page 110, in said Register's Office; thence along the West line of the property conveyed by the last mentioned Deed, North 22 degrees 30 minutes East 559. feet to a point in the Southern line of Hamill Road; thence along the Southern line of Hamill Road, running South 67 degrees 36 minutes East, passing the West line of Carl Drive at 100 feet, the East line of Carl Drive at 140 feet, a total distance of 1,042.68 feet to the point of beginning.  
EXCEPTING the Northeast corner thereof, which has been taken in rounding the curve at the intersection of the West line of Hooker Road with the South line of Hamill Road.  
EXCEPTING the parcels taken at the intersection of the East and West lines of Carl Drive with the South line of Hamill Road, in rounding the curve at said intersections.  
REFERENCE is made for prior title to Deed recorded in Book 1665, page 345, to Deed recorded in Book 1705, page 261, and re-recorded in Book 1707, page 110, to Deed recorded in Book 1093, page 68, to Deed recorded in Book 1324, page 524, and to Deed recorded in Book 1324, page 525, all in the Register's Office of Hamilton County, Tennessee.

There is further excluded the right-of-way of Central of Georgia Railway, 30 feet in width, located within the boundaries of the track, and shown on Plat of survey by Bell & Tewhitt Engineering Associates, Inc., Drawing No. 79-090, dated August 30, 1979.

1/220/0  
5/11/83

Form 668 Rev. December 1982	<i>g/w</i> Department of the Treasury - Internal Revenue Service <b>Notice of Federal Tax Lien Under Internal Revenue Laws</b>	
District	Serial Number	For Optional Use by Recording Office
Nashville	C-83-380	K 3 4 3 9

As provided by sections 6321, 6322, and 6323 of the Internal Revenue Code, notice is given that taxes (including interest and penalties) have been assessed against the following-named taxpayer. Demand for payment of this liability has been made, but it remains unpaid. Therefore, there is a lien in favor of the United States on all property and rights to property belonging to this taxpayer for the amount of these taxes, and additional penalties, interest, and costs that may accrue.

Name of taxpayer [REDACTED]	
Residence 1427 Brenda Rd. Chattanooga, TN 37415	
<b>IMPORTANT RELEASE INFORMATION</b> — With respect to each assessment listed below, unless notice of lien is filed by the date given in column 5(a), this notice shall, on the day following such date, operate as a certificate of release as defined in IRC 6225(a).	

↑  
IDENTIFICATION  
REFERENCE  
MAY 29 8:00 AM '83  
DOROTHY P. BRANNER  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

Kind of Tax (a)	Tax Period Ended (a)	Identifying Number (a)	Date of Assessment (a)	Last Day for Relieving (a)	Unpaid Balance of Assessment (a)
1040	12-31-78	411-74-8619	03-26-79 10-05-81 05-25-81	08-07-85 02-17-88 10-07-87	218.89
1040	12-31-80	"			200.82

Place of filing Register of Deeds Hamilton County 1994 Chattanooga, TN 37402	Total \$ 419.71
---	-----------------

MAY 29 MISC A\* 6.00 \* 6.00

This notice was prepared and signed at Chattanooga, TN on May 29, 1983.

the 16th day of May, 1983

Signature <u>J. B. GATES</u>	Title Revenue Officer 6733
---------------------------------	-------------------------------

(Notary Certificate of officer authorized by law to take acknowledgements which is essential to the validity of Notice of Federal Tax Lien  
G.C.M. 20419, T-930-1, C.B. 125.)

Part 1 — To be kept by recording office

Form 668 Rev. 12-82



Form 658  
Rev. December 1982

Department of the Treasury - Internal Revenue Service  
**Notice of Federal Tax Lien Under Internal Revenue Laws**

2896-240

District

Nashville

Serial Number

C-83-396

For Optional Use by Recording Office

K 3 4 4 1

As provided by sections 6321, 6322, and 6323 of the Internal Revenue Code, notice is given that taxes (including interest and penalties) have been assessed against the following-named taxpayer. Demand for payment of this liability has been made, but it remains unpaid. Therefore, there is a lien in favor of the United States on all property and rights to property belonging to this taxpayer for the amount of these taxes, and additional penalties, interest, and costs that may accrue.

Name of Taxpayer

Robert J & June R Coulter

Residence

17 Inglenook Dr.  
Chattanooga, TN 37411

IDENTIFICATION  
REFERENCE

MAY 20 8 01 AM '83

DOROTHY P. BRIMMER  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

IMPORTANT RELEASE INFORMATION — With respect to each assessment listed below, unless notice of lien is refluxed by the date given in column 6 of this notice shall, on the day following such date, operate as a certificate of release as defined in IRC 6325 (a).

Kind of Tax (a)	Tax Period Ended (b)	Identifying Number (c)	Date of Assessment (d)	Last Day for Refiling (e)	Unpaid Balance of Assessment (f)
1040	12-31-80	409-46-9553	02-07-83	03-09-89	3,764.76

Place of Filing

Register of Deeds  
Hamilton County 1994  
Chattanooga, TN 37402

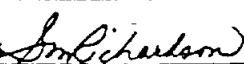
Total \$ 3,764.76

This notice was prepared and signed at Chattanooga, TN on this

the 18th day of May 1983

Signature

S. M. RICHARDSON



Title

Revenue Officer 1716

(Noticer Certified officer authorized by law to take acknowledgements other than to the validity of Notice of Federal Tax Lien  
G.C.M. 28419, 1930-1, C.B. 123.)

Part 1 — To be kept by recording office

Form 658 (Rev. 1-82)

Form 668 Rev. December 1990	2 <small>Department of the Treasury - Internal Revenue Service</small> <b>Notice of Federal Tax Lien Under Internal Revenue Laws</b>				
District  Nashville	Serial Number  C-83-397			For Optional Use by Recording Office  K 3 4 4 2	
<p>As provided by sections 6321, 6322, and 6323 of the Internal Revenue Code, notice is given that taxes (including interest and penalties) have been assessed against the following-named taxpayer. Demand for payment of this liability has been made, but it remains unpaid. Therefore, there is a lien in favor of the United States on all property and rights to property belonging to this taxpayer for the amount of these taxes, and additional penalties, interest, and costs that may accrue.</p>					
<p>Name of taxpayer  SOHYGH PC                    A Corporation</p>					
<p>Residence  714 Central Ave. Chattanooga, TN 37403</p>					
<p><b>IMPORTANT RELEASE INFORMATION --</b> With respect to each assessment listed below, unless notice of lien is filed by the date given in column (d), this notice shall, on the day following such date, operate as a certificate of release as defined in IRC 6325 (a).</p>					
Kind of Tax (a)	Tax Period Ended (b)	Identifying Number (c)	Date of Assessment (d)	Last Day for Refiling (e)	Unpaid Balance of Assessment (f)
941	09-30-82	62-0945383	12-06-82	01-05-89	4,001.15
<b>Place of Filing</b> Register of Deeds Hamilton County 1994 Chattanooga, TN 37402					Total \$ 4,001.15

This notice was prepared and signed at Chattanooga, TN on the  
18th day of May 83

<b>Signature</b>  <u>S. M. WREN</u>	<b>Title</b>  Revenue Officer 1714
---	--

(Other certificate of officer authorized by law to take acknowledgments is not essential to the validity of Notice of Federal Tax Lien.)  
G.C.R. 26447, 1930-1, C.R. 123.

Mr. & Mrs. John & Son FULL RELEASE OF LIEN  
P.O. Box 1

book 2896 page 242

26 year, 2 37343  
**Description of Property:** The third civil district of Hamilton County, Tennessee.  
That part of the hereinafter described property that lies Eastwardly of the Eastern  
line of South Cemetery Road;

Original Note Amount \$ 2,892.24

CITIZENS SAVINGS & LOAN CORPORATION, 3004 Austin Road, Hixson  
TENNESSEE, declaring it was the true and lawful owner or holder at  
the time of payment of the indebtedness described in and secured by  
a lien in the Deed, Deed of Trust, and/or Mortgage from Dorothy A. Lockmiller and  
Aaron Lockmiller to Citizens Savings and Loan Corporation,  
3004 Austin Road of record in Book 2802 page 518, in the Register's  
Office of Hamilton County, Tennessee, to which reference is hereby made,  
and hereby acknowledges the payment in full of said indebtedness and the  
satisfaction and discharge of said lien.

K 3 4 4 3  
IN WITNESS WHEREOF, said Corporation has hereunto subscribed its  
name on this 2nd day of May 1983.

IDENTIFICATION  
REFERENCE

CITIZENS SAVINGS & LOAN CORPORATION

MAY 20 8 03 AM '83

BY Jane German  
DOROTHY P. BRAMMER  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

STATE OF TENNESSEE)  
COUNTY OF HAMILTON) 1983 MISC A\* 3.00 \* 3.00

On this the 2nd day of May 1983, before me personally  
appeared Jane German with whom I am personally acquainted, and  
who upon oath acknowledged himself to be the cashier of Citizens  
Savings and Loan Corporation, 3004 Austin Road and that he as such officer,  
being authorized so to do, executed the foregoing instrument for the purpose  
therein contained, by signing the name of the Corporation by himself as  
cashier.

Witness my hand and seal at office in Chattanooga, Tennessee this 2  
day of May 1983.

Donald J. Rehm  
Notary Public

My Commission expires:

12/08/85  
Seal

This instrument was prepared by:  
Citizens Savings & Loan Corporation  
3004 Austin Road  
Hixson, Tennessee 37343

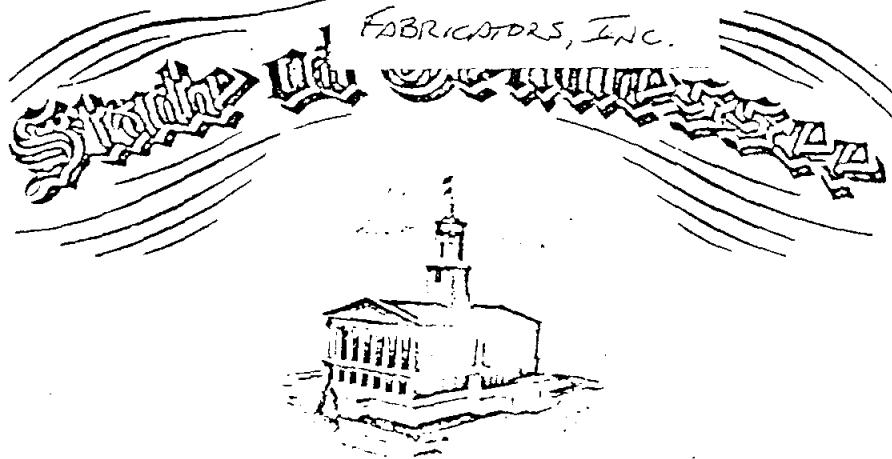
1971

CERT. OF INCORP.

CONC. FORM

FABRICATORS, INC.

book 1965 PAGE 557



CERTIFICATE

The undersigned, as Secretary of State of the State of Tennessee, hereby certifies that the attached document was received for filing on behalf of CONCRETE FORM FABRICATORS, INC.

(Name of Corporation)  
was duly executed in accordance with the Tennessee General Corporation Act,  
was found to conform to law and was filed by the undersigned, as Secretary of  
State, on the date noted on the document.

THEREFORE, the undersigned, as Secretary of State, and by virtue of  
the authority vested in him by law, hereby issues this certificate and attaches  
hereto the document which was duly filed on May Nineteenth, 1971.

Jimmie L. Jackson  
Secretary of State



May 19, 1971

book 1965 PAGE 558

CHARTER OF A CORPORATION

OF

CONCRETE FORM FABRICATORS, INC.

- (a) The name of the corporation is:  
CONCRETE FORM FABRICATORS, INC.
- (b) The duration of the corporation is perpetual.
- (c) The address of the principal office of the corporation in this state is:

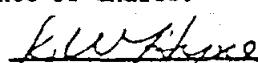
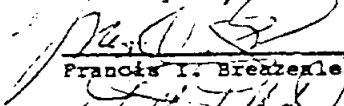
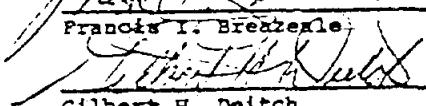
314 Hooker Road, Hamilton County,  
Chattanooga, Tennessee

- (d) The corporation is for profit.
- (e) The purposes for which the corporation is organized are:

1. To engage in all types of steel fabrication.
2. To engage in all types of pre-casting.
3. To engage in subcontracting all types of form work.
4. To engage in the erection of all types of pre-cast materials and forms.
5. To engage in any other legal business.

- (f) The maximum number of shares without par value that the corporation is authorized to issue shall be ten thousand (10,000) shares of common stock.

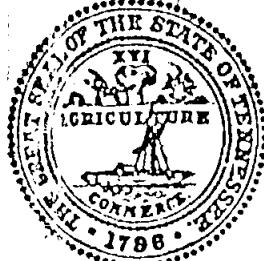
- (g) The corporation will not commence business until consideration of not less than One Thousand Dollars (\$1,000.00) has been received for the issuance of shares.

  
R.W. Hyre  
Francis T. Brezencie  
Gilbert H. Deitch

INCORPORATORS

Duncan, Bowd & Braggs  
att: Mr. Braggs  
1702 Duncan Hall Rd #113  
Dallas, Texas 75202

book 1965 page 559



CHARTER  
OF  
CONCRETE FORM FABRICATORS,  
INC.

RECEIVED FEE, \$ 10.00

RECEIVED TAX, \$ 50.00

TOTAL, \$ 60.00

A 68044 MISC 500 \* 5.00

IDENTIFICATION  
REFERENCE

MAY 27 1971  
DOROTHY P. BRANNER  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

Secretary of State

10

JAN 16 1987

THIS INSTRUMENT WAS PREPARED BY C. G. COOPER, JR.  
ATTORNEY, 627 WISCONSIN ST., CHATANOOGA, TENNESSEE.

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IN CONSIDERATION OF TWO THOUSAND AND NO/100 (\$2,000.00) DOLLARS, cash in hand paid, the receipt of which is hereby acknowledged and the execution by the grantee hereof of one (1) instalment note of even date herewith for Eight Thousand and NO/100 (\$8,000.00) Dollars, payable in monthly instalments of Two Hundred Fifty and NO/100 (\$250.00) Dollars each, the first instalment being due and payable on or before one month from date and one instalment due and payable on or before each month thereafter until the sum of Eight Thousand and NO/100

(\$8,000.00) Dollars on the principal and all interest thereon shall have been fully paid and satisfied, with interest from date at the rate of six per cent (6%) per annum, payable on the unpaid balance as each instalment matures; it is expressly agreed that should any one of said instalments or interest remain due and unpaid for thirty (30) days after maturity, then the remaining instalments of said note and interest may be treated as due and payable, the payment of all of which is secured by a vendor's lien which is hereby retained on the real estate hereinafter described, and as better security for the payment of said note and to more easily enforce its collection the grantee has executed to The Title Guaranty and Trust Company

of Chattanooga, Trustee, a deed of trust on said real estate, containing full power of sale, etc., but it is agreed and understood that an entry of the release of said note either on the margin of the recorded copy of this lien deed or of said deed of trust in the Office of the Register of Hamilton County, Tennessee, will release both the vendor's lien retained in this deed and the lien created by said deed of trust whether the said deed of trust be recorded or not; Mr. K. C. FITSCHEM and wife, MARIE M. FITSCHEM, do hereby sell, transfer and convey unto THE CONCRETE FORMS CORPORATION, a corporation organized and existing under the laws of the State of Tennessee, the following described real estate in the City of Chattanooga, Hamilton County, Tennessee:

Being the east one hundred (100) feet of the property conveyed to K. C. Fitchen and wife, Marie M. Fitchen by deed recorded in Book 1562, page 286, in the Register's Office of Hamblton County, Tennessee, and being more particularly described as follows: BEGINNING at a stone monument in the southeast corner of East Forty-sixth (46th) Street (Hooker Road) and Carl Avenue (forty (40) feet wide); thence along the western line of East Forty-sixth (46th) Street (forty (40) feet wide) one hundred (100) feet to a stone monument bearing degrees thirty (30) minutes west five hundred fifty-five (555) feet to a stone monument bearing the southeast corner of the Fitchen tract; thence along the south line of said tract north eighty-nine (89) degrees thirty (30) minutes west one hundred (100) feet to a point; thence north twenty (20) degrees thirty (30) minutes east five hundred fifty-five (555) feet to a stone monument in the south line of East Forty-sixth (46th) Street (Hooker Road); thence south eighty-nine (89) degrees thirty (30) minutes east along the south line of East Forty-sixth (46th) Street one hundred (100) feet to the point of beginning.

SUBJECT to the right-of-way of Central of Georgia Railway Company and any additional widths for slopes and curvatures as recorded in Book X, Volume 13, page 477, in said Register's Office.

SUBJECT to the sever easement set out in the deed to Wilcox & Company, Inc., recorded in Book 341, page 400, in said Register's Office.

SEARCHING FOR A LOST SOUL IN THE LAND OF THE LOST.

TENNS for the year 1846 are to be presented between the grantors and the grantees herein as of this date.

TO HAVE AND TO HOLD the same unto the said CONCRETE RODS CORPORATION, a Tennessee corporation successors and assigns, forever in fee simple. It convenient that we are lawfully seized of said real estate, have full power and lawful authority to sell and convey the same that the title thereto is clear, free and unencumbered, except as heretofore mentioned

262 entries our books total 262, 2nd day of December, 1866.

JAN 10 1971

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This instrument was prepared by J. J. Ryan  
J. & R. Rd. Co., 906 W. Broadway  
Louisville, Kentucky

JAN 12 1960  
I. H. ROSE, Esq.  
11  
D. M.

315

FOR AND IN CONSIDERATION of the sum of Ten Thousand Five Hundred Dollars (\$10,500.00) paid and to be paid by CONCRETE FORMS CORPORATION, a corporation of the State of Tennessee, party of the second part, herein-after called Grantee, as follows: Twenty-five Hundred Dollars (\$2,500.00) cash in hand paid, the receipt of which is hereby acknowledged, and for the unpaid balance the said Concrete Forms Corporation, Grantee, has executed and delivered its promissory note of even date herewith for the sum of Eight Thousand Dollars (\$8,000.00), payable to the order of the Louisville and Nashville Railroad Company, said sum to be paid in monthly installments of Two Hundred Dollars (\$200.00) each including principal and interest at the rate of six percent (6%) per annum until paid, and to secure the payment of said note and interest, a lien is hereby retained upon the land herein conveyed, LOUISVILLE AND NASHVILLE RAILROAD COMPANY, a corporation created and existing under the laws of the State of Kentucky, party of the first part, herein-after called Grantor, has bargained and sold and by these presents does hereby bargain, sell, transfer, and convey unto Concrete Forms Corporation, its successors and assigns, two tracts of land in the City of Chattanooga, County of Hamilton, State of Tennessee, being more particularly described as follows:

TRACT No. 1 - Beginning at a point in the center line of Hooker Road, said point being in the most easterly corner of a tract of land conveyed to The Tennessee Property Company by C. E. James and wife by deed dated March 17, 1916, recorded in Book "Q", Volume 13, page 191, in the Register's Office, Hamilton County, Tennessee; thence South 22° 10' West along said center line of Hooker Road and the center line of Wilson Road a distance of two hundred ten and seventy-five hundredths (210.75) feet, more or less, to a point in the most southerly corner of said tract of land conveyed to The Tennessee Property Company aforesaid; thence North 67° 24' West along the southwest line of the aforesaid conveyance passing a concrete monument at twenty-five (25) feet, in all a distance of five hundred ninety and five hundredths (590.05) feet to a point in the property line between the Grantor and the Central of Georgia Railway, said point being fifteen (15) feet measured southeastwardly at right angles from a point in the center line of the Central of Georgia's track; thence northeastwardly along said property line, fifteen (15) feet southeastwardly from and parallel to said center line of track a distance of three hundred eight and seventy-two hundredths (308.72) feet to a point in Grantee's south property line; thence South 67° 30' East along the property line between the Grantor and Grantee a distance of three hundred sixty-three and eighty-four hundredths (363.84) feet to the point of beginning, containing two and thirty-five hundredths (2.35) acres, more or less.

TRACT No. 2 - Beginning at a concrete monument in the property line between the Grantor and the Central of Georgia Railway, said point being fifteen (15) feet measured northwardly at right angles from a point in the center line of the Central of Georgia track, said point being in the southwest line of a tract of land conveyed to The Tennessee Property Company by C. E. James and wife by deed dated March 17, 1916, recorded in Book "Q", Volume 13, page 191, in the Register's Office of Hamilton County, Tennessee; thence North 67° 24' West, one hundred thirty and twenty-four hundredths (130.24) feet to a point, thence North 30° 46' West, ninety-eight and fifty-five hundredths (98.55) feet to a point; thence North 75° 01' West, one hundred thirty-one and eighty-six hundredths (131.86) feet to a point; thence North 71° 39' West, one hundred seventy-three and eighty-five hundredths (173.85) feet to a point; thence North 22° 30' East, fifteen and ninety-four hundredths (15.94) feet to a point; thence North 68° 21'

# RECORD BOOK 1665

point; thence North 22° 30' East, one hundred sixty-nine and fifteen-four hundredths (169.54) feet to a point in the property line between the Grantor and Grantee; thence South 67° 30' East along said property line, passing a distance of four hundred forty-one and forty hundredths (441.40) feet to a point in the north corner of a tract of land conveyed to the Chattanooga Warehouse and Compress Company by The Tennessee Property Company by deed dated November 4, 1928; thence along said property line and the aforesaid conveyance the following courses and distances: South 22° 30' West, fifteen and fifty hundredths (15.50) feet; South 67° 30' East, two hundred four (204) feet; North 22° 30' East, fifteen and fifty hundredths (15.50) feet to a point in the east corner of said conveyance to the Chattanooga Warehouse and Compress Company; thence South 67° 30' East along the property line between the Grantor and Grantee, leaving said line of the conveyance to the Chattanooga Warehouse and Compress Company a distance of three hundred twelve and eighty-six hundredths (312.86) feet to a point in the central of George's northwest right of way line; thence southwesterly along said northwest right of way line, fifteen (15) feet northerwardly from and parallel to said center line of track a distance of two hundred ninety-nine and seventy-five hundredths (299.75) feet to the point of beginning, containing three and eighteen hundredths (3.18) acres, more or less.

The two above tracts of land being a part of the same property conveyed to The Tennessee Property Company by C. E. James and wife by deed dated March 17, 1916, recorded in Book "Q", Volume 13, page 191, in the Register's Office, Hamilton County, Tennessee, and being a part of the same property conveyed to the Louisville and Nashville Railroad Company by The Tennessee Property Company as Tract No. 8 in deed dated August 6, 1913, recorded in Book 1547, page 367, and a part of the same property acquired by the Grantor through merger between the Louisville and Nashville Railroad Company and The Louisville, Chattanooga & St. Louis Railway on August 30, 1917, the Agreement of Mergers being recorded in Book 1285, page 423, in the office aforesaid.

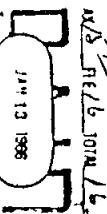
This conveyance is made subject to the reservations set out in said deed from C. E. James and wife to The Tennessee Property Company for rights for wagon roads parallel to East End Avenue across the property above conveyed at a point 1,300 feet and 1,900 feet east of East End Avenue. It is also subject to all rights of the Chattanooga Gas and Coal Products Company to lay a sewer across part of the land herein described under a permit granted on March 1, 1916, as mentioned in said deed.

This conveyance is also made subject to rights of way of Wilson Road and Hooker Road which cross the southeast end of Tract No. 1 hereinabove described.

The Grantee agrees to assume and be bound by all obligations assumed by the Grantor in deeds or contracts affecting the premises hereby conveyed, and to recognize any easements to which the above-described premises are subject, whether such easements be apparent, or created by instruments of record; otherwise.

Taxes for the year 1965 on the above described property will be prorated as of the date of deed.

TO HAVE AND TO HOLD the said tracts of land, with all the appurtenances thereto belonging, to the Grantee, his successors and assigns, forever in fee simple, with covenant of General Warranty. *W.L. Field, Jr. 23*



JAN 13 1966

TITLE RECORD BOOK 1665

- 4 -

IN WITNESS WHEREOF, the Grantor has hereunto subscribed his name,  
this 1st day of July, 1965.

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LOUISVILLE AND NASHVILLE RAILROAD COMPANY

By W. H. Kendall  
President

Attest:

C. Hayden Edwards  
Secretary



STATE OF KENTUCKY }

JEFFERSON COUNTY }

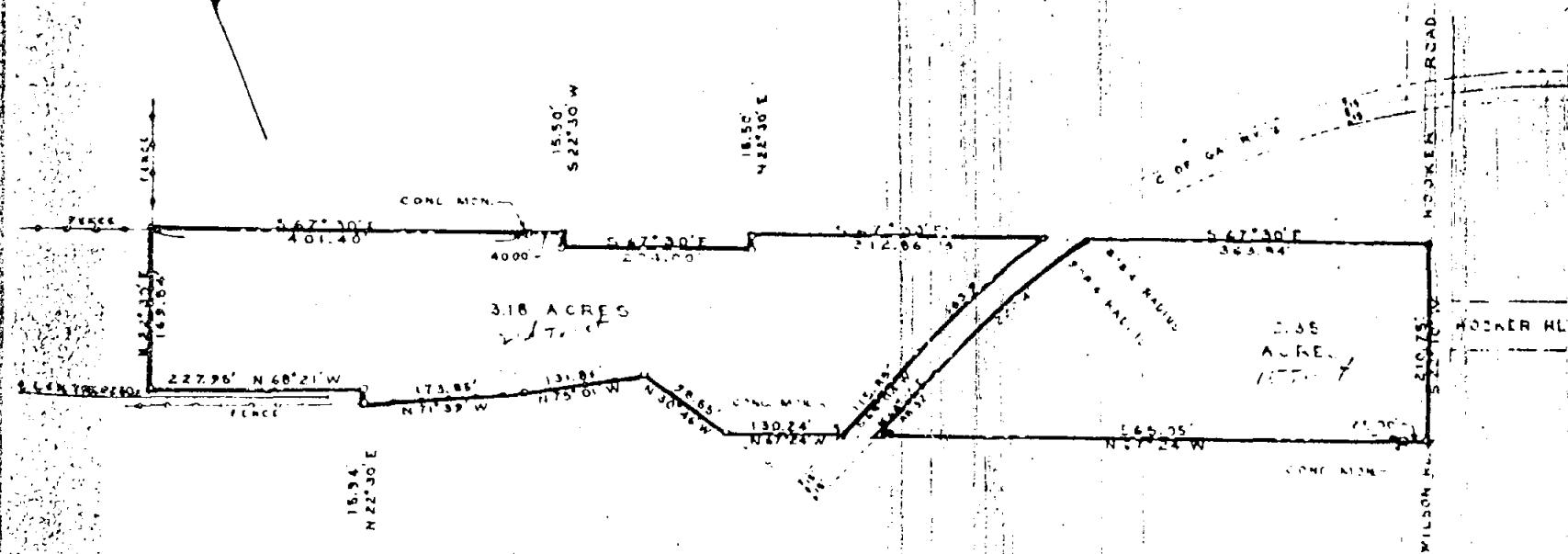
Personally appeared before me, Virginia Stewart, a Notary Public in and for said State and County, W. H. Kendall and C. Hayden Edwards, with whom I am personally acquainted, and who upon oath acknowledged themselves to be the President and Secretary, respectively, of the Louisville and Nashville Railroad Company, a corporation, the within named bargainer, and that they as such President and Secretary, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation thereto by W. H. Kendall, as President, and attesting the same by C. Hayden Edwards, as Secretary, and affixing the corporate seal thereto.

My commission expires June 19, 1966.  
Witness my hand and official seal at Louisville, Jefferson County, Kentucky, on this 1 day of July, 1965.

Virginia Stewart  
Notary Public, Jefferson County, Kentucky

NOTARY PUBLIC, JEFFERSON COUNTY, KY.  
By Commission Expires June 19, 1966

CHATTANOOGA, TENN.  
ALTON PARK



SW $\frac{1}{4}$  OF SECTION 10,  
T6 S SOUTH, R4 WEST,  
OCOEE DISTRICT BASE LINE

# HAMILTON COUNTY

L. & N. R. R. CO.  
WESTERN & ATLANTIC DIV. CHATTANOOGA, TENN.

5.53 ACRES OF LAND TO BE SOLD  
TO CONCRETE FORMS CORPORATION

OFFICE OF ASST. ENGR.  
SCALE: 1" = 100'

CHATTANOOGA, TENN.  
FEBRUARY 18, 1969

3041-74

RECORDED COPY NO. 1  
LAW OFFICES FOR PLATERS

Roadway Segment  
Railways & SMC  
TND, Inc.

KNOX  
THIS AGREEMENT, made this 5th day of December, 1961, between  
CENTRAL OF GEORGIA RAILWAY COMPANY, a Georgia corporation, hereinafter  
styled Railroad, party of the first part;

THE ALABAMA GREAT SOUTHERN RAILROAD COMPANY, an Alabama corporation,  
hereinafter styled Alabama Company, party of the second part; and  
SMC INDUSTRIES, INC., a Tennessee corporation, hereinafter styled  
Industry, party of the third part;

WITNESSETH:

THAT Railroad, for and in consideration of the sum of TWO HUNDRED  
EIGHTY DOLLARS (\$280) to it paid by Industry the receipt whereof is hereby ac-  
knowledged, does hereby quitclaim and convey unto SMC INDUSTRIES, INC., its  
successors and assigns, a right of way or easement for the construction, main-  
tenance and use of a road upon, across, at grade, and over the land of Railroad  
at CHATTANOOGA, Tennessee, more particularly described as follows:

A right of way or easement 40 feet in width for the construc-  
tion, maintenance and use of a road, the location and dimensions of  
which are substantially as shown in red on plan of Deed No.  
L-2765, dated October 29, 1963, hereto annexed and made a part  
hereof;

RESERVING, however, unto Railroad and Alabama Company and their re-  
spective successors and assigns the right to continue to maintain, repair, move  
and operate their railroad and appurtenances across said easement and to make  
such revision or relocation of their track and to construct such additional  
track or tracks and other railroad facilities across said easement and maintain  
repair, move and operate the same as in the judgment of Railroad and Alabama  
Company may be requisite.

TO HAVE AND TO HOLD the said right of way or easement to SMC INDUS-  
TRIES, INC., its successors and assigns, a 1/2 or 1/4 of the time hereafter such use of said  
land for roadway purposes, who if at any time hereafter shall utilize  
the same and recordation of title Industry, that said property hereby conveyed shall be  
orthogonalized and revert to Railroad and its successors and assigns.

INDUSTRY covenants and agrees for itself and its successors and as-  
signs, unto and with Railroad and Alabama Company, their successors and assigns,  
as a covenant running with the easement hereby-conveyed, and as a part of the  
consideration for this conveyance, said covenant being evidenced by the accept-  
ance and recordation of title Industry, that said property hereby  
conveyed will be utilized by Industry, its successors and assigns, in conju-  
nction with adjoining premises now or formerly of Industry, for the construction  
of a road on the aforescribed property and subject to the following terms and  
conditions:

1. Industry covenants for itself and its successors and assigns that  
said road will be used for ingress and egress to and from adjoining private  
now or formerly of Industry and for no other purpose. Industry will construct  
and maintain said road without cost or expense to Railroad and Alabama Company  
upon said property of Railroad and over said road track in such manner that the same  
shall not interfere with the use made or to be made of said property by Railroad  
and Alabama Company, and in accordance with plans and specifications approved  
by Railroad and Alabama Company.
2. No person other than Industry, its successors and assigns and its  
agents or employees, shall be permitted to use said road; Industry

hereby agreeing that said road shall be a private road for the use and convenience  
of Industry, its successors and assigns and is not intended as a highway  
for the use of the public. To the end of preventing the use of said road by  
the public, Industry will, at the expense of itself, construct and maintain,  
during the life of this indenture, at such location or locations as may be  
designated by the proper officer of Railroad, a stonewall or signboard clearly  
indicating that said road is for the private purposes of Industry, its suc-  
cessors and assigns.

3. Industry accepts the privilege hereby granted with full cogni-  
tence of the risk of loss of life, personal injury, or property loss or damage  
which may be caused by railroad operations of Railroad and Alabama Company at  
or in the vicinity of said road; and Industry covenants, with warranty of its  
authority so to do, that the privilege shall be used and enjoyed at the sole  
risk of Industry, its successors and assigns, Railroad and Alabama Company to  
have no responsibility in the premises; Industry hereby specifically agrees,  
for itself and its successors and assigns, that it and they will indemnify and  
save harmless Railroad and Alabama Company, and each of them, from and against  
liability for any such loss, injury or damage, in connection with the use of  
said road, whether the same may result from the negligence of Railroad and  
Alabama Company, or either of them, or otherwise.

RECORD BOOK 1562

RECORD BOOK 1562

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IN WITNESS WHEREOF, Central of Georgia Railway Company and The Alabama Great Southern Railroad Company have caused these presents to be executed, and their corporate seals to be hereunto affixed and attested, by their officers thereunto duly authorized, as of the day and year first above written.

CENTRAL OF GEORGIA RAILWAY COMPANY,  
By

*J. E. C. L. Jackson*  
Executive Vice President.

L. S.  
ATTEST:

*M. M. McLaughlin*  
Asst. Secretary.

THE ALABAMA GREAT SOUTHERN RAILROAD  
COMPANY,  
By

*B. C. Murray*  
Vice President.

L. S.  
ATTEST:

*A. H. Dwyer*  
Assistant Secretary.

STATE OF GEORGIA,  
County of Chatham.

Before me, Bennie L. Baxter, a Notary Public in and for said County, personally appeared R. J. Curry, who, upon oath, acknowledged himself to be Executive Vice President of Central of Georgia Railway Company, one of the within named bargaining, a corporation, and that he, as such Executive Vice President, being authorized so to do, executed the foregoing instrument for the purpose therein contained, by signing the name of the corporation by himself as Executive Vice President.

WITNESS my hand and seal, at office this 7th day of December, 1963.

*Bennie L. Baxter*  
Notary Public, County of  
Chatham.

My commission expires January 1, 1967.

DISTRICT OF COLUMBIA.

Before me, Robert R. House, a Notary Public in and for the District of Columbia, personally appeared R. J. Curry, with whom I am personally acquainted, and who, upon oath, acknowledged himself to be Vice President of The Alabama Great Southern Railroad Company, one of the within named bargaining, a corporation, and that he, as such Vice-President, being authorized so to do, executed the foregoing instrument for the purpose therein contained, by signing the name of the corporation by himself as Vice President.

WITNESS my hand and seal, at office in Washington, D. C., this 5th day of December, 1963.

*Robert R. House*  
Notary Public in and for the District  
of Columbia.

My commission expires November 14, 1966.

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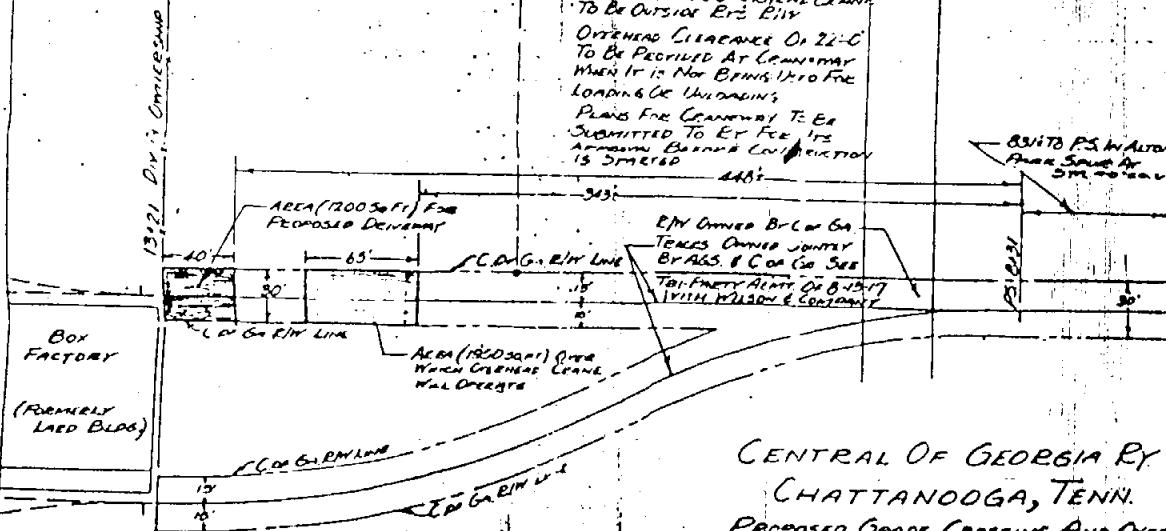
S. M. C.  
INDUSTRIES INC.

100

**SUPPORTERS FOR OVERSEAS CRIMINALS  
TO BE OUTSIDE ERIS BILLY**

**OVERSEAS CRIMINALS OR 21-6  
TO BE PROSECUTED AT COMMON LAW  
WHEN IT IS NOT BENEFAICIAL TO THE  
LAWYER & THE DEFENDANT.**

**PLAIN TRUTH CRIMINALS TO BE  
EXEMPTED TO ER FEES ITS  
ARMED BODIES CONFIDENTIAL  
IS ORDERED**



CENTRAL OF GEORGIA RY.  
CHATTANOOGA, TENN.

PROPOSED GRADE CROSSING AND OVERHEAD CROWNSWAY FOR S.M.C. INDUSTRY INC.

Office Of Engg Mgrs  
SOUTHERN Ry Station  
Scale 1"=30' gds  
Cincinnati, Ohio  
April 28, 1963  
DEANING No 42763

RECORD BOOK . 1562

# RECORD BOOK 1562

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MANUFACTURED  
L. M. SINGER, JR. ASSESSOR

DEC 27 1963

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IN CONSIDERATION of the sum of one dollar (\$1.00), cash in hand paid, and other good and valuable considerations, the receipt of which is acknowledged, I, L. M. SINGER, JR., ASSESSOR, for and in consideration of the sum of Twenty Thousand and No 100 Dollars (\$20,000.00), evidenced by one or more money notes, or even date, executed by the Grantee herein, payable by me or my assigns, at the time and place and on the terms and conditions hereinafter set forth, and on the day of December, Nineteen Hundred and Sixty Five (\$1965) annually, beginning one year from date, bearing interest from date at six per cent (6%) per annum, payable annually on the unpaid principal balance, with full privilege of prepayment of any annual instalment, at any time, with interest accrued thence to date of payment, to secure payment of which note, a VENDOR'S LIEN is expressly retained on the hereinabove described Real Estate and to further secure payment of said note and more easily enforced its collection, the said Grantee have assigned simultaneously herewith a DEED OF TRUST to MILLER-REYNOLDS GUARANTEE TITLE AGENT, INC., Trustee, it being provided that an entry of release and satisfaction of said note, either on the margin of the record of this Deed, or of the Deed of Trust, in the Register's Office of Hamilton County, Tennessee, will operate as a release and discharge of both the Vendor's Lien herein retained, and the lien created by said Deed of Trust, whether it is of record or not;

S. M. C. INDUSTRIES, INC., a Tennessee Corporation, does hereby sell, transfer and convey unto K. C. FITSCHEN and wife, MARIE M. FITSCHEN, the following described Real Estate:-

IN THE CITY OF CHATTANOOGA, HAMILTON COUNTY, TENNESSEE, Being running at a stone monument in the Southwest corner of East 46th Street (Gooch Road) and Carl Avenue (40 feet wide); thence along the West line of Carl Avenue South 20 degrees 30 minutes West 359 feet to a stone monument; thence along the South line of Wilson & Co., Inc. tract, North 69 degrees 30 minutes West 101.40 feet to a fence post corner; thence North 19 degrees 52 minutes East 42.8 feet to corner of concrete loading dock of Box factory; thence along South line of concrete loading dock of Box factory; thence along South West 126.83 feet to a rock on metal plate; thence on a line running North between box factory and Wilson, Inc. tract, North 30 degrees 21 minutes East 10.5 feet to a black iron dock South 69 degrees 30 minutes East 139.43 feet to an iron pile; thence South 20 degrees 30 minutes West 7.03 feet to a corner in concrete; thence parallel to and 13 feet South of existing track South 99 degrees 33 minutes East 300 feet to an iron pipe corner; thence parallel to Carl Avenue North 20 degrees 30 minutes East 419.6 feet to a stone monument in the South line of East 46th Street (Gooch Road); thence South 89 degrees 30 minutes East along the South line of East 46th Street (Ophelia Road) 100 feet to a stone monument; the point of beginning and containing 21.382 acres, all as shown on Better Engineering Co., Inc., Deed #222-A-39, dated October 2, 1947, last revised November 1, 1950.

RENTING AND LETTING unto S. M. C. Industries, Inc., its successors or assigns, the full right and privilege to construct, erect and maintain foundations and steel or crane to go over the railroad, on two parcels of land, each to be 10 feet in length along the South side of the right-of-way of the railroad, measured East and West, and 4 feet in width, extending Southeastward from the South side of the railroad right-of-way, measured North and South, the first of said two parcels of land being located approximately 80 feet Eastwardly of the West end of the line or call in the description above set forth that reads "thence parallel to and 15 feet South of existing track South 99 degrees 33 minutes East 300 feet to an iron pipe corner", and the second or said two parcels of land to be located 30 feet Eastwardly along said line or call from the East line of the first of the said two parcels of land, the same to be an easement appurtenant to remaining lands now owned by S. M. C. Industries, Inc., and to constitute a covenant and easement running with the lands,

EXCEPTING from the property hereinabove running with the lands,

(1)

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ADMISSIBLE FOR PLEADING

K. C. & Marie Fitschen

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strips of land throughout said property heretofore sold to Central of Georgia Railway Company, as shown by instrument recorded in Book A, Vol. 13, page 477, in the Register's Office of Hamilton County, Tennessee, and being right-of-way now in use by Central of Georgia Railway Company and The Alabama Great Southern Railroad Company.

TOGETHER WITH driveway and parking easement, as hereinafter more fully set forth, in and upon the following described tract of land: BEGINNING at a point in the South line of East 46th Street (Hoover Road), said point being North 89 degrees 30 minutes West 363 feet from the Southwest intersection of East 46th Street (Hoover Road) and Carl Avenue; thence along the East line of a 17-foot brick driveway South 20 degrees 30 minutes West 309.3 feet to a point; thence South 59 degrees 10 minutes East 133 feet to a point in the West line of Tract 2A; thence along the West line of Tract 2A South 20 degrees 30 minutes West 73 feet to an iron pin heretofore described in Tract 2C and being at the Northwest corner, more or less, of box factory mentioned in this description; thence North 59 degrees 30 minutes East 17 feet to the point of beginning. All as shown on Beets Engineering Co., Inc. Doc. #4222-A-38, dated October 2, 1947, last revised November 1, 1963.

The western 17 feet of said parcel of land comprises a brick driveway, which is subject to the right to pass and repass, over and upon, and to use, together with others, said strip of land 17 feet wide fronting on Hoover Road and extending southerly to the Southern most line of said parcel of land, the same to be used as a roadway for the purpose of ingress and egress, by foot or vehicle, to and from Hoover Road, for all lawful purposes connected with the use and enjoyment by owners or occupants, their successors and assigns, of land adjacent to and abutting said strip of land, as hereinafter above described, created and provided for, and the right is herein granted to use said strip of land for such purpose, to reach the remaining portion of the parcel of land, as hereinabove described; further, the full right and privilege of common use, with SMC Industries, Inc., its successors or assigns, of the remaining portion of said herein next above described parcel of land, being 73 feet in width and 133 feet in length, as a common trucking area, the same to be for the common use and benefit of the said SMC Industries, Inc., its successors or assigns, and/or of property adjoining the same, and the owners and occupants of the tract of land hereinabove first described, to which the same is an apportionment easement, and with right of ingress and egress across and upon the same;

FURTHER, right-of-way or easement 40 feet in width for the construction, maintenance and use of a road, the location and dimensions of which are substantially shown in red on print of Deed No. 42765, dated December 2th, 1963, annexed to and made a part of right-of-way conveyance from Central of Georgia Railway Company and The Alabama Great Southern Railroad Company to SMC Industries, Inc., dated December 3th, 1963, the said parcel of land being approximately 40 feet in length East and West, and 30 feet in width North and South, lying adjacent to and East of the common parking and trucking area hereinabove described and set forth, and along a Northern boundary line of the tract of land hereinabove first described, all as will appear by reference to said instrument executed by Central of Georgia Railway Company, et al., dated December 3th, 1963, which will hereinafter appear of record in the Register's Office of Hamilton County, Tennessee, together with all rights and privileges thereto stipulated, provided and set forth, and SUBJECT TO all reservations and rights by Central of Georgia Railway Company and The Alabama Great Southern Railroad Company, therunder, the terms, conditions and provisions of said instrument, being by reference incorporated in and made a part hereof.

REFERENCE is made to prior title to Book 1553, page 22, of the Register's Office of Hamilton County, Tennessee.

SUBJECT TO governmental zoning and subdivision ordinances or regulations in effect thereon.

TO HAVE AND TO HOLD the said described real estate unto the said K. C. Pritchett and wife, Marie K. Pritchett, their heirs and assigns, forever to come.

SMC INDUSTRIES, INC., covenants that it is lawfully seized and possessed of said described real estate; has good right and lawful authority to hold and convey the same; that the title thereto is clear, free and unencumbered, unimpeded as herein set forth; and it will forever warrant and defend the same against all other lawful claims.

PIONEER BANK & TRUSTEES OF PIONEER CORPORATION, entitling it to be lawful for payment of which is incurred by Bank of Trust to Phillips, F. Clark, Trustee, Elizabethtown, Kentucky, recorded in book 1442, page 155, in the Register's Office of Franklin County, Tennessee, for good and sufficient considerations, the receipt of which is hereby acknowledged, done hereby joint in the execution of this instrument to fully release and forever discharge from the title created by said Deed of Trust, the hereinabove described Real Estate, including the improvements granted and created, and subject to the reservations made by SMC Industries, Inc., it being the intent and purpose by Jolander in this Deed to release all property, and property rights, easements, etc., as granted and conveyed unto K. C. Pitachen and wife, Marie M. Pitachen, that are subject to the title of the Deed of Trust above mentioned. It is stipulated, the title of said Deed of Trust shall remain in full force and effect on all other property covered thereby.

IN WITNESS WHEREOF SMC Industries, Inc., has caused its corporate name to be signed, by its duly authorized officers, and Pioneer Bank has caused its corporate name to be signed, by its duly authorized officers, on this the 16th day of December, 1963.

  
 SMC INDUSTRIES, INC.  
 By   
 Pioneer Bank  
 Belmore Ave.  
 Dec 16 1963  
 NY 2750 Remington 3800

PIONEER BANK

(3)  
 DAVID M. RAMSEY  
 COUNTY COURT CLERK

STATE OF TENNESSEE  
 COUNTY OF HAMILTON

On this 24<sup>th</sup> day of December, 1963, before me personally appeared J. L. Clegg and C. A. Clegg, both whom I personally acquainted, and who upon oath acknowledged themselves to be the Officers and Employees respectively, of SMC Industries, Inc., No. 717 in Elizabethtown, a corporation, and that they as such officers being such, do, execute the foregoing instrument for the purposes therein contained, by signing the same of the corporation by themselves as such officers.

IN WITNESS WHEREOF I have hereunto set my hand and Notarial Seal.

  
 Notary Public

Dec 24 1963  
 Notary Public

STATE OF TENNESSEE  
 COUNTY OF HAMILTON

On this 24<sup>th</sup> day of December, 1963, before me personally appeared John D. Gaskins and John D. Gaskins, both whom I personally acquainted, and who upon oath acknowledged himself to be the President, John D. Gaskins, a corporation, and that he, as such officer being authorized so to do, executed the foregoing instrument for the purposes thereof contained, by signing the same of the corporation by himself as such officers.

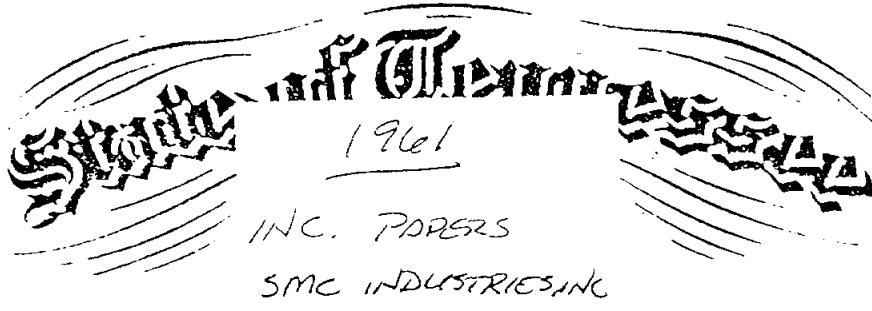
IN WITNESS WHEREOF I have hereunto set my hand and Notarial Seal.

  
 Notary Public

Notary Public  
 John D. Gaskins

RECORD BOOK 1562

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Department of State

I, Joe C. Carr, Secretary of State of the State of Tennessee, do hereby certify that the annexed Instrument with Certificate of Acknowledgment was filed in my office and recorded on the 13th day of May 1961.

IN CORPORATION RECORD BOOK MISCELLANEOUS A-43, PAGE 1351

In Testimony Whereof, I have hereunto subscribed my Official Signature and by order of the Governor affixed the Great Seal of the State of Tennessee at the Department in the City of Nashville,

this 13th day of

May 1961

Joe C. Carr  
Secretary of State

## STATE OF TENNESSEE

## CERTIFICATE OF INCORPORATION

NAME. <u>First.</u>	The name of this corporation is S. M. C. INDUSTRIES, INC.
ADDRESS. <u>Second.</u>	The address of the principal office of this corporation in the State of Tennessee is Beeler Road and East 46th Street, Chattanooga.
BUSINESS. <u>Third.</u>	The general nature of the business to be trans- acted by the corporation shall be to own, buy, acquire, sell, lease, mortgage, exchange or otherwise dispose of goods, wares, merchandise and materials of every kind and description; to own, buy, sell, acquire, lease, exchange, mortgage, improve and main- tain real estate, franchises, interest in lands, buildings and structures of all types and kinds for itself and others; and the purchase and sale of any personal property necessary or incidental to the transaction of such business or businesses. The corpora- tion shall have the power and authority to enter into guarantees, endorsements or other- wise act as surety, under any terms, for the debts and obligations of any other corporation, persons or firms, and shall have the power and authority to enter into any transactions, activities, business or obligations together with others, jointly or severally, and as partner or joint venture, and to purchase and own stock in any other corporations.
STOCK. <u>Fourth.</u>	The maximum number of shares of stock which this corporation is authorized to have out- standing at any time is FIVE HUNDRED (500) shares of common stock of the par value of ONE HUNDRED (\$100.00) Dollars per share. The stock may be issued and disposed of for such considerations in money, property or services as may be fixed from time to time by the stockholders at any stockholders' meeting or by the Board of Directors from time to time when acting under general or special authority granted by the stockholders. The corporation may impose such restrictions and limitations upon the transferability of all stock as are not prohibited by law, so- long as the imposition of such restrictions are in conformity with such procedures as are required by law.

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when the amount paid (\$10,000.00) dollars) exceeds  
when such amount has fixed shall have been  
subscribed for, all subscriptions of the  
stock at this corporation shall be enforceable.

and it may proceed to do business in the same manner and as fully as though the maximum number of shares authorized under the

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tion, and reserves all rights conferred upon corporations or stockholders herein or

Notice, subject to this reservation and

subject to the will of the corporate body.

As the understanding, apply to the state of mind, by

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GOLDA

Dec 20th

THEORY OF CLOUDS

Personally appeared before me the within named Incorporated  
Form, I. T. COLBY, BETTY J. CHATMAN, SHELLEY JOYCE WILK, with  
those I am personally acquainted, and who acknowledged that they  
executed the within application form Charter of Incorporation  
for the purpose therein contained and expressed.

WITNESS my hand and official seal at my office  
Atlanta, Georgia, this the 9th day of May, 1961.

1954

CERT. OF INCORP.

Conc. Forms

CONTRACTORS, INC

STATE OF TENNESSEE, I, JOE C. CARR, Secretary of State, do hereby certify that the following is a true copy of the Certificate of Incorporation of CONCRETE FORMS CONTRACTORS, INC., a corporation organized under the laws of the State of Tennessee, filed with me personally, and duly acknowledged by the above-named persons, to be the chief title officer and title officer, respectively, of TENNESSEE TITLE COMPANY OF CHATTANOOGA, INC., trustee, the within named corporation; and that they, as such chief title officer and title officer, being authorized so to do, executed the foregoing instrument for the purpose therein contained by signing the name of the corporation by themselves as such chief title officer and title officer.

IN WITNESS WHEREOF, I have hereunto set my hand and seal at my Office in said County and State on this the 29 day of September 1954,

*Joe C. Carr*  
Notary Public

My commission expires: Jan. 1, 1969

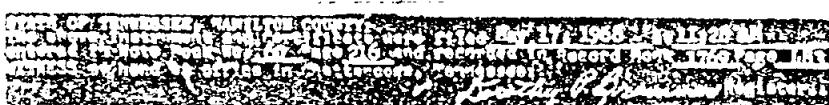
STATE OF TENNESSEE  
COUNTY OF HAMILTON

I, the grantee herein, hereby swear or affirm that the actual consideration for this transfer or value of the property transferred, whichever is greater is \$ 2100.00, which amount is equal to or greater than the amount which the property transferred would command at a fair and voluntary sale.

*Charles Estelle Trustee*  
Affiant

Subscribed and sworn to before me on  
this the 10 day of May,  
1968.

*James O. Neal*



184

State of Tennessee



Department of State

I, JOE C. CARR, Secretary of State of the State of Tennessee, do hereby certify that the annexed is a true and correct copy of the Certificate of Incorporation of

CONCRETE FORMS CONTRACTORS, INC.

which was recorded in this office on September 29, 1954

In Corporation Record Book Misc. A-25, page 523.

IN WITNESS WHEREOF, I have hereunto affixed my signature  
and the Great Seal of the State, at Nashville, this third  
day of JANUARY in the year of our Lord  
nineteen hundred 68.

*J. Carr*  
Secretary of State

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CERTIFICATE OF INCORPORATION

The name of the Corporation is  
CONCRETE PRODUCTS CONTRACTORS INC.  
The address of the principal office of the Corporation shall be 344 BROADWAY,  
BURLAND, CHATTANOOGA, TENNESSEE.

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**BUSINESS:** The proprietor which the Corporation is formed are to carry on and conduct a general manufacturing, constructing, erecting and contracting business in design, construction, manufacture, popular, domestic and foreign generally in any work upon buildings, houses, barns, highways, streets, embankments, bridges, enterprises and structures, of concrete, iron, steel, and timber, brick and other construction to be by hand or otherwise acquired or disposed of, with and other works known as a great or other any building materials or materials, fabrics, purchase or otherwise to make, build, repair, paint, clean, wash, sell or dispose of building materials or appliances of all kinds and descriptions; in so far as any commercial, industrial or manufacturing enterprise individual, or in aid of its business to apply for, obtain, negotiate, purchase, lease or otherwise acquire, to build, use, own, operate and introduce, and to sell, lease or otherwise dispose of any trade names, copyrights, patents, inventions, improvements and processes used in connection with or secured under letters patent of the United States of America, or elsewhere, or otherwise and to use, exercise, develop and protect such rights as respect to, or otherwise cause to accrue, any such trade name, trade marks, copyrights, patents, assignments, improvements, processes, or any such property or rights.

other States of the United States of America, and in the State of Tennessee and

The maximum number of shares of stock which this corporation is authorized to have outstanding at any time is 10,000 shares of common stock with a par value of \$1.00 per share.

THE CAP

Corporate social responsibility has been a major topic in business ethics literature for over two decades.

The Corporation shall have all power granted to such corporations by Chapter 90 of the Public Act of the State of Tennessee and all amendments thereto.

for a Charter of Incorporation, for the purposes and with the powers, etc., declared in the foregoing instrument.

STATE OF TENNESSEE:  
COUNTY OF HAMILTON:

personally appeared before me, Mrs. H. S. Stetson, a Notary Public, the within named Incorporator, Silas Williams, Jr., Alvin U. White, and Mercer Reynolds, Jr., with whom I am personally acquainted, and who deposed that they executed the within application for a Charter of Incorporation for the purpose therein contained.

Will see my band and office in Chattanooga, Tennessee, this 27 day  
of September, 1934

**L. O. RODGARD PEARL, Secretary of State, to Faculty Near Meade, via  
My Committee on Ethics 1-7-16**

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RECEIVED UP JURISDICTION, BENTON COUNTY  
THE ABOVE INSTRUMENT AND CERTIFICATE ARE FILED  
ENTERED IN NOTE BOOK NO. 26 AND, RECORDED IN INDEX  
OF RECORDS ON THIS DAY OF APRIL, 1911.

Site No. TND 003328960  
Appendix B

Analytical Data Sheets

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source Lander Co.  
 I.D./Site No. 33-633  
 County 33 Field No. LC-SS-01  
 Stream Mile \_\_\_\_\_ Depth 2"  
 Collected: Date 2-7-94 Time 10:00 By CSS  
 Contact Hazard Unknown  
 Signature of sampler Greg Starnes  
 Send Report to Wayne Everett, CFO

Sampling Agency		Sample Type		Sample Priority	
— APC	— DOT	— Sediment	— Emergency	— Soil	— Legal
— DWS	— GW	— sludge	— Routine	— Tissue	— Ambient
— SWM	— UST	Other _____		Date Priority needed: <u>3/14/94</u>	
EEP <input checked="" type="checkbox"/>	SF <input checked="" type="checkbox"/>	Billing Code (required)		Field Comments:	
		<u>327.38-11</u>			

For lab use only  
 Laboratory Number K402077  
 Date received 2-8-94  
 Time received 11:30 by CAB  
 Date reported MAR 31 1994 by EAM  
 Reviewed by Edward M. Gray  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	25406	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	4.4	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	72	34252		beryllium, Bc	mg/Kg		01025		cadmium, Cd	µg/L	
01028	<input checked="" type="checkbox"/>	cadmium, Cd	mg/kg	1.7	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	120	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	10	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	15	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	14.7	81660		iron, Fe	mg/kg		01145		selenium, Sc	µg/L	
01170		iron, Fe	mg/kg	28200	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	14	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	440893	71930		mercury, Hg	mg/kg				Other		
01053	<input checked="" type="checkbox"/>	manganese, Mn	mg/kg	1480	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	14.4	01149		selenium, Sc	mg/kg						
01068		nickel, Ni	mg/kg	11	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	1050	01073		thallium, Tl	mg/Kg						
01148		selenium, Sc	mg/kg	<0.2	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	<10										
01093		zinc, Zn	mg/kg	50.6										
(X)721	<input checked="" type="checkbox"/>	cyanide, CN	mg/kg	<										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	79.3										
02731		phenols	mg/kg											

\* please check tests desired

Lab Comments \* Hg = 0.11

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source	<u>Lander G.</u>
I.D./Site No.	<u>33-633</u>
County	<u>33</u>
Field No.	<u>LC-55-02</u>
Stream Mile	Depth <u>2"</u>
Collected: Date	<u>2-8-94</u>
Time	<u>9:00</u>
By	<u>DV</u>
Contact Hazard	<u>Unknown</u>
Signature of sampler	<u>Don Van Hook</u>
Send Report to	<u>Wayne Everett</u>
CFO	

Sampling Agency	
— APC	— DOT
— DWS	— GW
— SWM	— UST
— EEP	<input checked="" type="checkbox"/> PASI
<input checked="" type="checkbox"/> SF	— WPC
— other (specify): _____	
Billing Code (required)	
<u>327.38-11</u>	
Sample Type	
<input checked="" type="checkbox"/> Soil	
<input checked="" type="checkbox"/> sludge	
<input checked="" type="checkbox"/> Tissue	
Other	
Sample Priority	
Emergency	
<input checked="" type="checkbox"/> Legal	
<input checked="" type="checkbox"/> Routine	
<input checked="" type="checkbox"/> Ambient	
Date Priority needed:	<u>3/14/94</u>
Field Comments:	

For lab use only K402086  
 Laboratory Number K402086  
 Date received 2-8-94  
 Time received 1345 by EAB  
 Date reported MAR 31 1994 by EAM  
 Reviewed by Edward M. Barry  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	13200	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	9.4	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	111	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	3.8	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	14100	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	29	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	19	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	289	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	14700	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	176	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	14180-2060	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	1000	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<0.1	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	18	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	160	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0.4	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	104										
01093		zinc, Zn	mg/kg	355										
00721	Y	cyanide, CN	mg/kg	1.1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	78.3										
		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source Landes G.  
 I.D./Site No. 33-633  
 County 33 Field No. LC-55-03  
 Stream Mile \_\_\_\_\_ Depth 2"  
 Collected: Date 2/8/94 Time 9:10 AM By CJS  
 Contact Hazard Unknown  
 Signature of sampler Ray Lannard  
 Send Report to Wayne Everett  
CFO

Sampling Agency		Sample Type	Sample Priority
— APC	— DOT	Sediment	Emergency
— DWS	— GW	<input checked="" type="checkbox"/> Soil	<input checked="" type="checkbox"/> Legal
— SWM	— UST	<input type="checkbox"/> sludge	<input checked="" type="checkbox"/> Routine
— EEP	<input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Tissue	<input type="checkbox"/> Ambient
— SF	— WPC	Other	Date Priority needed:
other (specify):		<u>3/14/94</u>	
Billing Code (required)			
<u>327.38-11</u>			
Field Comments:			

For lab use only  
 Laboratory Number K402087  
 Date received 2-8-94  
 Time received 1345 by LAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward M. Craig  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value
01108		aluminum, Al	mg/kg	<u>334</u>
01003		arsenic, As	mg/kg	<u>63.1</u>
01008		barium, Ba	mg/kg	<u>17</u>
01028		cadmium, Cd	mg/kg	<u>12.4</u>
00917		calcium, Ca	mg/kg	<u>772</u>
01029		chromium, Cr	mg/kg	<u>165</u>
01038		cobalt, Co	mg/kg	<u>31</u>
01043		copper, Cu	mg/kg	<u>106</u>
01170		iron, Fe	mg/kg	<u>395000</u>
01052		lead, Pb	mg/kg	<u>69</u>
00924		magnesium, Mg	mg/kg	<u>180</u>
01053		manganese, Mn	mg/kg	<u>4930</u>
71921		mercury, Hg	mg/kg	<u>20.1</u>
01068		nickel, Ni	mg/kg	<u>176</u>
00938		potassium, K	mg/kg	<u>159</u>
01148		selenium, Se	mg/kg	<u>&lt;0.2</u>
01078		silver, Ag	mg/kg	<u>&lt;1</u>
00934		sodium, Na	mg/kg	<u>394</u>
01093		zinc, Zn	mg/kg	<u>558</u>
00721	V	cyanide, CN	mg/kg	<u>&lt;1</u>
01023		boron, B	mg/kg	
		nitrogen, ammonia	mg/kg	
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg	
		nitrogen, total kjeldahl	mg/kg	
00668		phosphate, total	mg/kg	
		oil and grease	mg/g	
		hydrocarbons, total	mg/g	
		percent solids	%	<u>98.2</u>
2731		phenols	mg/kg	

code	*	Tissue	Unit	value
01099		antimony, Sb	mg/Kg	
01004		arsenic, As	mg/Kg	
34252		beryllium, Be	mg/Kg	
71940		cadmium, Cd	mg/Kg	
71939		chromium, Cr	mg/Kg	
81659		cobalt, Co	mg/Kg	
71937		copper, Cu	mg/kg	
81660		iron, Fe	mg/kg	
71936		lead, Pb	mg/kg	
81741		manganese, Mn	mg/kg	
71930		mercury, Hg	mg/kg	
01069		nickel, Ni	mg/kg	
01149		selenium, Se	mg/kg	
81742		silver, Ag	mg/kg	
01073		thallium, Tl	mg/Kg	
71938		zinc, Zn	mg/kg	
		Coal		
		ash	%	
		heat content	BTU	
		Moisture	%	
		sulfur	%	

\* please check tests desired

Lab Comments Trace of CN reaction but interference due to milky precipitate

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sam., Source Landes Co.  
I.D./Site No. 33-633  
County 33 Field No. LC-55-04  
Stream Mile \_\_\_\_\_ Depth 2"  
Collected: Date 7/21/94, Time 9:20 AM By SC  
Contact Hazard Unknown  
Signature of sampler Mark J. Pugh  
Send Report to Wayne Everett,  
CFO

<b>Sampling Agency</b> <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC  <input type="checkbox"/> other (specify): <hr/>	<b>Sample Type</b> <input checked="" type="checkbox"/> Sediment <input checked="" type="checkbox"/> Soil <input type="checkbox"/> sludge <input type="checkbox"/> Tissue  <input type="checkbox"/> Other _____ <hr/>	<b>Sample Priority</b> <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient  <b>Date Priority needed:</b> <hr/>
<b>Billing Code (required)</b> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>327.38-11</b> </div>		
<b>Field Comments:</b> <hr/>		

INORGANIC ANALYSIS, SOLIDS

For lab use only  
Laboratory Number K402088  
Date received 2-8-94  
Time received 1345 by LAB  
Date reported MAR 3 1 1994 by EAM  
Reviewed by Edward M. Chang  
Reviewed by J

\* please check tests desired

### Lab Comments

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source	<u>Lander Co.</u>		
I.D./Site No.	<u>33-633</u>		
County	<u>33</u>	Field No.	<u>LC-55-05</u>
Stream Mile	<u>Depth</u>	<u>1"</u>	<u>PM</u>
Collected: Date	<u>2/7/94</u>	Time	<u>1:10 PM</u>
Contact Hazard	<u>Unknown</u>		
Signature of sampler	<u>Ray L. Brown</u>		
Send Report to	<u>Wayne Everett</u>		
CFO			

Sampling Agency			
— APC	— DOT		
— DWS	— GW		
— SWM	— UST		
— EEP	— PASI		
— SF	— WPC		
— other (specify): _____			
Billing Code (required)	<u>327.38-11</u>		
Sample Type			
Sediment	<input checked="" type="checkbox"/>	Soil	<input checked="" type="checkbox"/>
sludge	<input type="checkbox"/>	Tissue	<input type="checkbox"/>
Other			
Sample Priority			
Emergency	<input checked="" type="checkbox"/>	Routine	<input checked="" type="checkbox"/>
Ambient	<input type="checkbox"/>		
Daily Priority needed:	<u>3/14/94</u>		
Field Comments:			

For lab use only  
 Laboratory Number K 4020 83  
 Date received 2-8-94  
 Time received 11:30 by LAB  
 Date reported MAR 31 1994 by EAM  
 Reviewed by Edward M. Cherry  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	8300	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	2.4	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	43	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	1.4	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
(X)917		calcium, Ca	mg/kg	4400	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	24	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	11	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	31.6	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	10600	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	82	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	850	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	695	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	20.1	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	8	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	806	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0.3	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	94										
01093		zinc, Zn	mg/kg	75.2										
(X)721		cyanide, CN	mg/kg	5.1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
(X)633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
(X)668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	74.8										
		elements	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source Lander Co.  
 I.D./Site No. 33-633  
 County 33 Field No. LC-55-06  
 Stream Milo Depth 1"  
 Collected: Date 2-7-94 Time 1:20 pm By CJS  
 Contact Hazard Unknown  
 Signature of sampler Ray Hammar  
 Send Report to Wayne Everett

Sampling Agency		Sample Type	Sample Priority
— APC	— DOT	Sediment	Emergency
— DWS	— GW	<input checked="" type="checkbox"/> Soil	<input checked="" type="checkbox"/> Legal
— SWM	— UST	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Routine
— EEP	<input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Tissue	<input type="checkbox"/> Ambient
<input checked="" type="checkbox"/> SF other (specify): _____		Other _____	Date Priority needed: <u>3/14/94</u>
Billing Code (required)			
Field Comments: <u>327.38-11</u>			

For lab use only  
 Laboratory Number K402084  
 Date received 2-8-94  
 Time received 11:30 by LAB  
 Date reported MAR 31 1994 by EAM  
 Reviewed by Edward M. Gray  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value
01108		aluminum, Al	mg/kg	6420
01003		arsenic, As	mg/kg	3.9
01008		barium, Ba	mg/kg	44
01028		cadmium, Cd	mg/kg	2.2
00917		calcium, Ca	mg/kg	6380
01029		chromium, Cr	mg/kg	23
01038		cobalt, Co	mg/kg	11
01043		copper, Cu	mg/kg	96.4
01170		iron, Fe	mg/kg	8910
01052		lead, Pb	mg/kg	83
00924		magnesium, Mg	mg/kg	771
01053		manganese, Mn	mg/kg	770
71921		mercury, Hg	mg/kg	40.1
01068		nickel, Ni	mg/kg	9
00938		potassium, K	mg/kg	624
01148		selenium, Se	mg/kg	0.3
01078		silver, Ag	mg/kg	<1
00934		sodium, Na	mg/kg	59
01093		zinc, Zn	mg/kg	70.8
(X)72!		cyanide, CN	mg/kg	4.5
01023		boron, B	mg/kg	
		nitrogen, ammonia	mg/kg	
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg	
		nitrogen, total kjeldahl	mg/kg	
00668		phosphate, total	mg/kg	
		oil and grease	mg/g	
		hydrocarbons, total	mg/g	
		percent solids	%	79.2
731		phenols	mg/kg	

code	*	Tissue	Unit	value
01099		antimony, Sb	mg/Kg	
01004		arsenic, As	mg/Kg	
34252		beryllium, Be	mg/Kg	
71940		cadmium, Cd	mg/Kg	
71939		chromium, Cr	mg/Kg	
81659		cobalt, Co	mg/Kg	
71937		copper, Cu	mg/kg	
81660		iron, Fe	mg/kg	
71936		lead, Pb	mg/kg	
81741		manganese, Mn	mg/kg	
71930		mercury, Hg	mg/kg	
01069		nickel, Ni	mg/kg	
01149		selenium, Se	mg/kg	
81742		silver, Ag	mg/kg	
01073		thallium, Tl	mg/Kg	
71938		zinc, Zn	mg/kg	
		Coal		
		ash	%	
		heat content	BTU	
		Moisture	%	
		sulfur	%	

\* please check tests desired

Lab Comments

recd 4/4-EDM

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Landes Co.  
 I.D./Site No. 33-633  
 County 33 Field No. LC-SD-01  
 Stream Milo Depth 2"  
 Collected Date 2-7-94 Time 8:30 AM By ESS  
 Contact Hazard Unknown  
 Signature of sampler John L. Lippard  
 Send Report to Wayne (Everett) CFO

Sampling Agency		Sample Type		Sample Priority	
— APC	— DOT	<input checked="" type="checkbox"/> Sediment	<input checked="" type="checkbox"/> Emergency		
— DWS	— GW	<input type="checkbox"/> Soil	<input checked="" type="checkbox"/> Legal		
— SWM	— UST	<input type="checkbox"/> sludge	<input checked="" type="checkbox"/> Routine		
— EEP	<input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Tissue	<input type="checkbox"/> Ambient		
— SF	— WPC	Other _____			
other (specify): _____		Date Priority needed:		<u>3/14/94</u>	
Billing Code (required)		Field Comments:		_____	
<u>327.38-11</u>					

## INORGANIC ANALYSIS, SOLIDS

For lab use only  
 Laboratory Number K402074  
 Date received 2-8-94  
 Time received 11:30 by LHS  
 Date reported MAR 31 1994 by EAM  
 Reviewed by Edward McCay  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01103		aluminum, Al	mg/kg	15300	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	2.8	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01003		barium, Ba	mg/kg	62	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	1.1	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	614	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	11	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01033		cobalt, Co	mg/kg	7	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	11.5	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	11700	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	35	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
0X924		magnesium, Mg	mg/kg	1040	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	236	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<0.1	01149		selenium, Se	mg/kg						
01068	Y	nickel, Ni	mg/kg	8	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	890	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0.4	71938		zinc, Zn	mg/kg						
01073		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	62										
01093		zinc, Zn	mg/kg	93.6										
0X721	Y	cyanide, CN	mg/kg	<1										
01023		boron, B	mg/kg											
00633		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
0X668		nitrogen, total kjeldahl	mg/kg											
		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	71.0										
		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source Landes Co.  
 I.D./Site No. 33-633  
 County 33 Field No. LC-SD-02  
 Stream Mile \_\_\_\_\_ Depth 4"  
 Collected: Date 2-7-94 Time 8:55 By cjs  
 Contact Hazard Unknown  
 Signature of sampler Craig Wannard  
 Send Report to Wayne Everett,  
CFO

Sampling Agency  
 APC — DOT  
 DWS — GW  
 SWM — UST  
 EEP — PASI  
 SF — WPC  
 other (specify): \_\_\_\_\_

Billing Code (required)  
327.38-11

Sample Type  
 Sediment  
 Soil  
 Sludge  
 Tissue  
 Other \_\_\_\_\_

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient  
 Date Priority needed:  
3/14/94

For lab use only  
 Laboratory Number K402075  
 Date received 2-8-94  
 Time received 1130 by LAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward M. Gray  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	26700	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	8.6	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	86	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	1.5	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	1550	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	14	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	17	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	20.0	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	17300	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	32	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	1280	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	1470	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<0.1	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	15	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	1420	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0.2	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	112										
01093		zinc, Zn	mg/kg	74.0										
00721	V	cyanide, CN	mg/kg	<1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00568		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	72.4										
0731		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source <u>Landes Co.</u> I.D./Site No. <u>33-633</u>	Sampling Agency — APC — DOT — DWS — GW — SWM — UST EEP <input checked="" type="checkbox"/> PASI SF <input type="checkbox"/> WPC other (specify): _____	Sample Type <input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Soil <input type="checkbox"/> sludge <input type="checkbox"/> Tissue Other _____	Sample Priority <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient Date Priority needed: <u>3/14/94</u>
County <u>33</u> Field No. <u>LC-SD-03</u> Stream Mile _____ Depth <u>1"</u> Collected Date <u>2-1-94</u> Time <u>9:10</u> By <u>CSS</u> Contact Hazard <u>Unknown</u> Signature of sampler <u>Craig Starnard</u> Send Report to <u>Wayne Everett</u> <u>CFO</u>	Billing Code (required) <u>327.38-11</u>	Field Comments:	

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	18800	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003	<input checked="" type="checkbox"/>	arsenic, As	mg/kg	5.2	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008	<input checked="" type="checkbox"/>	barium, Ba	mg/kg	48	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	1.9	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	1850	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	14	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	20	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	18.9	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	17800	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	38	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924	<input checked="" type="checkbox"/>	magnesium, Mg	mg/kg	17280110	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	1740	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<0.1	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	12	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	1190	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	<0.2	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	1										
00934		sodium, Na	mg/kg	36										
01093		zinc, Zn	mg/kg	7517										
00721	<input checked="" type="checkbox"/>	cyanide, CN	mg/kg	<1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	77.6										
72731		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source Landes Co.  
 I.D./Site No. 33-633  
 County 33- Field No. LC-SD-04  
 Stream Mile \_\_\_\_\_ Depth \_\_\_\_\_  
 Collected: Date 2-7-94 Time 10:15 AM By CJS  
 Contact Hazard Unknown  
 Signature of sampler Ray L. Cannon  
 Send Report to Wayne Everett  
CFO

Sampling Agency		Sample Type		Sample Priority	
APC	DOT	<input checked="" type="checkbox"/> Sediment	<input type="checkbox"/> Soil	<input type="checkbox"/> Emergency	<input type="checkbox"/> Legal
DWS	GW	<input type="checkbox"/> Sludge	<input type="checkbox"/> Tissue	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Ambient
SWM	UST	Other		Date Priority needed:	
EEP	PASI			<u>3/14/94</u>	
SF	WPC				
other (specify):					
Billing Code (required)				Field Comments:	
<u>327.38-11</u>					

For lab use only  
 Laboratory Number K402078  
 Date received 2-8-84  
 Time received 11:30 by LAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward M. Cray  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value
01108		aluminum, Al	mg/kg	504.0
01003	<input checked="" type="checkbox"/>	arsenic, As	mg/kg	16.2
01008		barium, Ba	mg/kg	177 ± 10
01028		cadmium, Cd	mg/kg	2.0
00917		calcium, Ca	mg/kg	2760
01029		chromium, Cr	mg/kg	25
01038		cobalt, Co	mg/kg	10
01043		copper, Cu	mg/kg	159
01170	<input checked="" type="checkbox"/>	iron, Fe	mg/kg	13200
01052		lead, Pb	mg/kg	215
00924		magnesium, Mg	mg/kg	843.86
01053		manganese, Mn	mg/kg	359
71921		mercury, Hg	mg/kg	0.81
01068		nickel, Ni	mg/kg	10
00938		potassium, K	mg/kg	790
01148		selenium, Se	mg/kg	2.2
01078		silver, Ag	mg/kg	21
00934		sodium, Na	mg/kg	122
01093		zinc, Zn	mg/kg	245
01721	<input checked="" type="checkbox"/>	cyanide, CN	mg/kg	2180
01023		boron, B	mg/kg	
		nitrogen, ammonia	mg/kg	
00633		nitrogen, NO, & NO <sub>x</sub>	mg/kg	
		nitrogen, total kjeldahl	mg/kg	
00668		phosphate, total	mg/kg	
		oil and grease	mg/g	
		hydrocarbons, total	mg/g	
		percent solids	%	66.8
10731		phenols	mg/kg	

code	*	Tissue	Unit	value
01099		antimony, Sb	mg/Kg	
01004		arsenic, As	mg/Kg	
34252		beryllium, Be	mg/Kg	
71940		cadmium, Cd	mg/Kg	
71939		chromium, Cr	mg/Kg	
81659		cobalt, Co	mg/Kg	
71937		copper, Cu	mg/kg	
81660		iron, Fe	mg/kg	
71936		lead, Pb	mg/kg	
81741		manganese, Mn	mg/kg	
71930		mercury, Hg	mg/kg	
01069		nickel, Ni	mg/kg	
01149		selenium, Se	mg/kg	
81742		silver, Ag	mg/kg	
01073		thallium, Tl	mg/Kg	
71938		zinc, Zn	mg/kg	
		Coal		
		ash	%	
		heat content	BTU	
		Moisture	%	
		sulfur	%	

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source	Landes Co.
I.D./Site No.	33-633
County	33
Field No.	LC-SD-05
Stream Mile	Depth
Collected: Date	12-7-93
Time	2:00 pm
By	CJS
Contact Hazard	Unknown
Signature of sampler	Craig Mangold
Send Report to	Wayne Everett, CFO

Sampling Agency	
— APC	— DOT
— DWS	— GW
— SWM	— UST
— EEP	— PASI
<input checked="" type="checkbox"/> SF	— WPC
— other (specify):	
Billing Code (required)	327.38-11
Sample Type	
<input checked="" type="checkbox"/> Sediment	
<input type="checkbox"/> Soil	
<input type="checkbox"/> sludge	
<input type="checkbox"/> Tissue	
Other	
Sample Priority	
<input checked="" type="checkbox"/> Emergency	
<input checked="" type="checkbox"/> Legal	
<input checked="" type="checkbox"/> Routine	
<input type="checkbox"/> Ambient	
Date Priority needed:	3/14/94
Field Comments:	

For lab use only K402085  
 Laboratory Number 2-8-94  
 Date received 11/30 by LAB  
 Time received by  
 Date reported MAR 31 1994 by EAM  
 Reviewed by Edward M. Craig  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value
01108		aluminum, Al	mg/kg	16700
01003		arsenic, As	mg/kg	26.4
01008	<input checked="" type="checkbox"/>	barium, Ba	mg/kg	140
01028		cadmium, Cd	mg/kg	7.4
00917		calcium, Ca	mg/kg	4530
01029		chromium, Cr	mg/kg	81
01038		cobalt, Co	mg/kg	177
01043		copper, Cu	mg/kg	262
01170		iron, Fe	mg/kg	36300
01052	<input checked="" type="checkbox"/>	lead, Pb	mg/kg	317
00924		magnesium, Mg	mg/kg	1060
01053		manganese, Mn	mg/kg	4740
71921		mercury, Hg	mg/kg	1.26
01068		nickel, Ni	mg/kg	82
00938		potassium, K	mg/kg	1330
01148		selenium, Se	mg/kg	4.6
01078		silver, Ag	mg/kg	<1
00934		sodium, Na	mg/kg	256
01093		zinc, Zn	mg/kg	943
00721	<input checked="" type="checkbox"/>	cyanide, CN	mg/kg	207.6
01023		boron, B	mg/kg	
		nitrogen, ammonia	mg/kg	
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg	
		nitrogen, total kjeldahl	mg/kg	
00668		phosphate, total	mg/kg	
		oil and grease	mg/g	
		hydrocarbons, total	mg/g	
		percent solids	%	44.5
77731		phenols	mg/kg	

\* please check tests desired

Lab Comments \_\_\_\_\_

Coal	-
ash	%
heat content	BTU
Moisture	%
sulfur	%

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<i>Lander Co.</i>
I.D./Site No	33-633
County	33
Field No.	LC-WS-01
Stream Mile	Depth 2"
Collected: Date	2/7/94
Time	10:40 AM
By	CJS
Contact Hazard	<i>Unknown</i>
Signature of sampler	<i>Wayne Everell</i>
Send Report to	<i>CFO</i>

Sampling Agency	
APC	DOT
DWS	GW
SWM	UST
EEP	<input checked="" type="checkbox"/> PASI
SF	<input type="checkbox"/> WPC
other (specify):	
Billing Code (required)	
327.38-11	
Sample Type	
Sediment	<input type="checkbox"/>
Soil	<input type="checkbox"/>
sludge	<input type="checkbox"/>
Tissue	<input type="checkbox"/>
Other	<input checked="" type="checkbox"/> Waste
Sample Priority	
Emergency	<input type="checkbox"/>
Legal	<input checked="" type="checkbox"/>
Routine	<input checked="" type="checkbox"/>
Ambient	<input type="checkbox"/>
Date Priority needed:	
3/14/94	
Field Comments:	

## INORGANIC ANALYSIS, SOLIDS

For lab use only  
 Laboratory Number K402079  
 Date received 2-8-94  
 Time received 11:30 by CAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward D. Gray  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	5298	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	18.8	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	205	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	2.5	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	3090	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	111	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	13	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	65.6	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	14800	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	187	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	607	71930		mercury, Hg	mg/kg						
01053		manganese, Mn	mg/kg	382	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	0.89	01149		seleńium, Se	mg/kg				Other		
01068		nickel, Ni	mg/kg	10	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	698	01073		thallium, Tl	mg/kg						
01148		selenium, Se	mg/kg	3.1	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	222										
01093		zinc, Zn	mg/kg	108										
00721		cyanide, CN	mg/kg	2523										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
(X)633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
(X)668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	82.0										
		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source <u>Lander Co.</u>	Sampling Agency — APC    — DOT — DWS    — GW — SWM    — UST EEP <input checked="" type="checkbox"/> PASI SF    — WPC other (specify):	Sample Type — Sediment — Soil — sludge — Tissue Other <u>Waste</u>	Sample Priority — Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine — Ambient Date Priority needed: <u>3/14/94</u>
I.D./Site No. <u>33-633</u>	Field No. <u>LC-WS-02</u>	Billing Code (required) <u>327.38-11</u>	Field Comments:
County <u>33</u>	Stream Mile <u>2"</u>	Depth <u>10:50 AM CJS</u>	
Collected Date <u>2/7/94</u>	Time <u>10:50 AM</u>	By <u>CJS</u>	
Contact Hazard <u>Unknown</u>			
Signature of sampler <u>Wayne Everett</u>			
Send Report to <u>CFO</u>			

For lab use only K402080  
 Laboratory Number K402080  
 Date received 2-8-94  
 Time received 11:30 b, LAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward McCrary  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	187000	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	1.2	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	14	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	1.3	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	2230	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	11	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	3	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	11.1	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	5630	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	28	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	386	71930		mercury, Hg	mg/kg						
01053		manganese, Mn	mg/kg	147	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<0.1	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	4	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	199	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0.2	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	31										
01093		zinc, Zn	mg/kg	20.3										
00721		cyanide, CN	mg/kg	<1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	95.9										
37731		phenols	mp/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Lander Co.  
 I.D./Site No. 33-633  
 County 33 Field No. LC-W5-03  
 Stream Mile  Depth 2"  
 Collected: Date 2-7-94 Time 11:05 By CSS  
 Contact Hazard Unknown  
 Signature of sampler Ray Hammon  
 Send Report to Wayne Everett  
CFO

Sampling Agency		Sample Type		Sample Priority	
— APC	— DOT	Sediment	Emergency	— Legal	— Routine
— DWS	— GW	Soil	X	X	— Ambient
— SWM	— UST	sludge			
EEP	X PASI	Tissue			
X SF	— WPC	Other <u>Waste</u>	Date Priority needed:		
other (specify):			<u>3/14/94</u>		
Billing Code (required)		Field Comments: <u>327.38-11</u>			

## INORGANIC ANALYSIS, SOLIDS

For lab use only  
 Laboratory Number K402081  
 Date received 2-8-94  
 Time received 11:30 by CAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward McCrary  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	3600	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	28.1	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	192	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	41.9	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	1846	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	186	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01033		cobalt, Co	mg/kg	32	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	13300	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	52700	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	4190	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	4150	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	730	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	0.30	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	714	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	131	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	10.3-1.4	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	28										
00934		sodium, Na	mg/kg	62										
01093		zinc, Zn	mg/kg	14300										
00721		cyanide, CN	mg/kg	<1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00568		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
12731		percent solids	%	83.2										
		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	Lander Cr.
ID/Site No.	33-633
County	33
Stream Mile	Field No. LC-WS-04
Collected: Date	2-7-94
Contact Hazard	Unknown
Signature of sampler	Tom Lawrence
Send Report to	Wayne Everett, CFO

Sampling Agency	APC    APC DWS    DOT SWM    GW EEP    UST <input checked="" type="checkbox"/> SF    PASI other (specify):
Sample Type	Sediment Soil sludge Tissue Other <u>Waste</u>
Sample Priority	Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine Ambient
Date Priority needed:	3/14/94
Billing Code (required)	327.38-11
Field Comments:	

## INORGANIC ANALYSIS, SOLIDS

For lab use only K402082  
 Laboratory Number K402082  
 Date received 2-8-94  
 Time received 10:30 by LAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward M. Cray  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value
01108		aluminum, Al	mg/kg	1210
01003		arsenic, As	mg/kg	4.0
01008		barium, Ba	mg/kg	50
01028		cadmium, Cd	mg/kg	1.3
00917		calcium, Ca	mg/kg	1470
01029		chromium, Cr	mg/kg	18
01038		cobalt, Co	mg/kg	17
01043		copper, Cu	mg/kg	28.4
01170		iron, Fe	mg/kg	26000
01052		lead, Pb	mg/kg	43
00924		magnesium, Mg	mg/kg	1340
01053		manganese, Mn	mg/kg	1380
71921		mercury, Hg	mg/kg	<0.1
01068		nickel, Ni	mg/kg	15
00938		potassium, K	mg/kg	1840
01148		selenium, Se	mg/kg	0.3
01078		silver, Ag	mg/kg	<1
00934		sodium, Na	mg/kg	40
01093		zinc, Zn	mg/kg	90.7
00721		cyanide, CN	mg/kg	<1
01023		boron, B	mg/kg	
		nitrogen, ammonia	mg/kg	
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg	
		nitrogen, total kjeldahl	mg/kg	
00668		phosphate, total	mg/kg	
		oil and grease	mg/g	
		hydrocarbons, total	mg/g	
		percent solids	%	78.6
		phenols	mg/kg	

code	*	Tissue	Unit	value
01099		antimony, Sb	mg/Kg	
01004		arsenic, As	mg/Kg	
34252		beryllium, Be	mg/Kg	
71940		cadmium, Cd	mg/Kg	
71939		chromium, Cr	mg/Kg	
81659		cobalt, Co	mg/Kg	
71937		copper, Cu	mg/kg	
81660		iron, Fe	mg/kg	
71936		lead, Pb	mg/kg	
81741		manganese, Mn	mg/kg	
71930		mercury, Hg	mg/kg	
01069		nickel, Ni	mg/kg	
01149		selenium, Se	mg/kg	
81742		silver, Ag	mg/kg	
01073		thallium, Tl	mg/Kg	
71938		zinc, Zn	mg/kg	

code	*	Coal	Unit	value
		ash	%	
		heat content	BTU	
		Moisture	%	
		sulfur	%	

\* please check tests desired

Lab Comments \_\_\_\_\_

## TENNESSEE DEPARTMENT OF HEALTH

TE SLIP

FROM RLH	DATE 3/11/94
TO GAM	3-11-94
RAW	dc 3-11-94 (Raw)

Please review and route as indicated:

- NBO (box on 6th)
- SWM, Attn: Greg Luke, L&C Tower, 5th Floor
- DOT Sampling (see attached)
- Division of Superfund, L&C Tower, Attn.:  
Underground Storage Tanks, L&C Tower, Attn.:  
Chuck Head
- Division of Radiological Health
- Environmental Field Office; Water Pollution,  
Water Supply, Superfund, Underground Storage  
Tanks, Attn.:  
Brick Church Park Drive, Nashville, TN
- Division of Air Pollution Control, Attn.:  
Robert Brawner, Gary Leggett, Charles  
Northington
- Division of Water Pollution Control
- Division of Water Supply, Attn: Robert Foster,  
Tom Moss
- Division of Ground Water Protection
- Chattanooga Field Office; Water Pollution,  
Water Supply, Superfund, Underground Storage  
Tanks, Attn: Wayne Everett  
540 McCallie, Chattanooga, TN 37402
- Jackson Branch Lab, Attn: RLM
- Knoxville Branch Lab, Attn: EAM
- Aquatic Biology, Basement
- CEM, LQA, 5th floor
- Memphis Basin/Field Office
- Knoxville Basin/Field Office
- Jackson Basin/Field Office
- Johnson City Basin/Field Office
- Other

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Landes Co.  
 I.D./Site No 33-633  
 County 33 Field No. LC-55-01  
 Stream Mile \_\_\_\_\_ Depth 2"  
 Collected: Date 2-7-94 Time 10:00 By CJS  
 Contact Hazard Unknown  
 Signature of sampler Craig Kammard  
 Send Report to Wayne Everett, CFO

Sampling Agency  
 APC — DOT  
 DWS — GW  
 SWM — UST  
 EEP — PASI  
 SF — WPC  
 other (specify): \_\_\_\_\_

Billing Code (required)  
327.38-11

Sample Type  
 Soil  
 Sediment  
 Water  
 Other \_\_\_\_\_

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient

Date Priority needed:  
3/14/94

Field Comments: \_\_\_\_\_  
 \_\_\_\_\_

**ORGANIC ANALYSIS**  
 Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 90201A6

Date received 2/8/94

Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

## Halogenated

32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
34546	cis-1,2-dichloroethene
34541	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

## Halogenated

34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	vinyl chloride

## Aromatic

. 34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

## Other

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS. PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SOIL  
County: 33  
Field No: LC-SS-01  
Collected-Date 02/07/94 Time 10:00 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0146  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

## OTHER PURGEABLES

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Completed-Date: 02/16/94 Time:19:43 By:CS

@Reporting Units, unless otherwise noted:  
water ug/l; sediment ug/kg

Unit supervisor Jerry W. Dingman  
Date 3-1-94  
Signature of supervisor indicates that the  
work was performed in accordance with  
federally approved procedures where avail-  
able and in compliance with current quality  
assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED  
DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Lander Co.  
 I.D./Site No 33-633  
 County 33 Field No. LC-SS-02  
 Stream Mile \_\_\_\_\_ Depth 2"  
 Collected Date 12-8-94 Time 9:00 By DV  
 Contact Hazard Unknown  
 Signature of sampler Don Van Hook  
 Send Report to Wayne Everett  
CFO

Sampling Agency	Type	Priority
<input type="checkbox"/> APC	<input checked="" type="checkbox"/> Soil	<input type="checkbox"/> Emergency
<input type="checkbox"/> DWS	<input type="checkbox"/> Sediment	<input checked="" type="checkbox"/> Legal
<input type="checkbox"/> SWM	<input type="checkbox"/> UST	<input checked="" type="checkbox"/> Routine
<input type="checkbox"/> EEP	<input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Ambient
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> WPC	
other (specify):		
Billing Code (required)		Date Priority needed:
<u>327.38-11</u>		<u>3/14/94</u>
Field Comments:		

**ORGANIC ANALYSIS**  
**Purgeables and Petroleum Hydrocarbons**

For lab use only

Laboratory Number 94020171Date received 2/8/94Time received 1455 by LSB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

## Other

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics

## Additives:

Methyl tert-butyl ether  
diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

**Sample Priority:**

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SOIL  
County: 33  
Field No: LC-SS-02  
Collected-Date 02/08/94 Time 09:00 By DV  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0171  
Branch Lab Number  
Received-Date 02/08/94 Time 14:55 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 0.1
32101	BROMODICHLOROMETHANE	U < 0.1
34413	BROMOMETHANE	U < 0.1
32102	CARBON TETRACHLORIDE	U < 0.1
34301	CHLOROBENZENE	U < 0.1
34311	CHLOROETHANE	U < 0.1
34576	2-CHLOROETHYL VINYL ETHER	U < 0.1
32106	CHLOROFORM	U < 0.1
34418	CHLOROMETHANE	U < 0.1
32105	DIBROMOCHLOROMETHANE	U < 0.1
34536	1,2-DICHLOROBENZENE	U < 0.1
34566	1,3-DICHLOROBENZENE	U < 0.1
34571	1,4-DICHLOROBENZENE	U < 0.1
34668	DICHLORODIFLUOROMETHANE	U < 0.1
34496	1,1-DICHLOROETHANE	U < 0.1
34531	1,2-DICHLOROETHANE	U < 0.1
34501	1,1-DICHLOROETHENE	U < 0.1
	CIS-1,2-DICHLOROETHENE	U < 0.1
34546	TRANS-1,2-DICHLOROETHENE	U < 0.1
34541	1,2-DICHLOROPROPANE	U < 0.1
34045	CIS-1,3-DICHLOROPROPENE	U < 0.1
34699	TRANS-1,3-DICHLOROPROPENE	U < 0.1
34423	METHYLENE CHLORIDE	0.6
34516	1,1,2,2-TETRACHLOROETHANE	U < 0.1
34475	TETRACHLOROETHENE	U < 0.1
34506	1,1,1-TRICHLOROETHANE	U < 0.1
34511	1,1,2-TRICHLOROETHANE	U < 0.1
39180	TRICHLOROETHENE	U < 0.1
39488	TRICHLOROFLUOROMETHANE	U < 0.1
39715	VINYL CHLORIDE	U < 0.1

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	U < 1.0
34301	CHLOROBENZENE	U < 0.1
34536	1,2-DICHLOROBENZENE	U < 0.1
34566	1,3-DICHLOROBENZENE	U < 0.1
34571	1,4-DICHLOROBENZENE	U < 0.1
34371	ETHYL BENZENE	U < 1.0
34010	TOLUENE	U < 1.0
	O-XYLENE	U < 1.0
	M-XYLENE & P-XYLENE	U < 1.0

## OTHER PURGEABLES

Completed-Date: 02/18/94 Time:15:40 By:SDM

Unit supervisor Jerry W. Bingham  
Date 3-1-94

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

@Reporting Units, unless otherwise noted:  
water. ug/l; sediment. ug/kg

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Lander Co.  
 I.D./Site No 33-633  
 County 33 Field No. LC-S5-03  
 Stream Mile \_\_\_\_\_ Depth 2"  
 Collected: Date 2-8-94 Time 9:10 AM By CJS  
 Contact Hazard Unknown  
 Signature of sampler Greg Shannon  
 Send Report to Wayne Everett  
CFO

Sampling Agency	Sample Type	Sample Priority
<input type="checkbox"/> APC	Soil	Emergency
<input type="checkbox"/> DWS	Sediment	<input checked="" type="checkbox"/> Legal
<input type="checkbox"/> SWM	Water	<input checked="" type="checkbox"/> Routine
<input checked="" type="checkbox"/> EEP	<input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Ambient
<input checked="" type="checkbox"/> SF	WPC	
other (specify): _____		
Billing Code (required)		Date Priority needed:
<u>327.38-11</u>		<u>3/14/94</u>
Field Comments: _____		

**ORGANIC ANALYSIS**  
**Purgeables and Petroleum Hydrocarbons**

For lab use only

Laboratory Number 94020172Date received 2/8/94Time received 1455 by LSB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics

Additives:  
 Methyl tert-butyl ether  
 diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS. PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANNEDES CO.  
Sample Site Code: 33-633  
Sample Type: SOIL  
County: 33  
Field No: LC-SS-03  
Collected-Date 02/08/94 Time 09:10 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0172  
Branch Lab Number  
Received-Date 02/08/94 Time 14:55 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 0.1
32101	BROMODICHLOROMETHANE	U < 0.1
34413	BROMOMETHANE	U < 0.1
32102	CARBON TETRACHLORIDE	U < 0.1
34301	CHLOROBENZENE	U < 0.1
34311	CHLOROETHANE	U < 0.1
34576	2-CHLOROETHYL VINYL ETHER	U < 0.1
32106	CHLOROFORM	U < 0.1
34418	CHLORMETHANE	U < 0.1
32105	DIBROMOCHLOROMETHANE	U < 0.1
34536	1,2-DICHLOROBENZENE	U < 0.1
34566	1,3-DICHLOROBENZENE	U < 0.1
34571	1,4-DICHLOROBENZENE	U < 0.1
34668	DICHLORODIFLUOROMETHANE	U < 0.1
34496	1,1-DICHLOROETHANE	U < 0.1
34531	1,2-DICHLOROETHANE	U < 0.1
34501	1,1-DICHLOROETHENE	U < 0.1
	CIS-1,2-DICHLOROETHENE	U < 0.1
34546	TRANS-1,2-DICHLOROETHENE	U < 0.1
34541	1,2-DICHLOROPROPANE	U < 0.1
34045	CIS-1,3-DICHLOROPROPENE	U < 0.1
34699	TRANS-1,3-DICHLOROPROPENE	U < 0.1
34423	METHYLENE CHLORIDE	2.8
34516	1,1,2,2-TETRACHLOROETHANE	U < 0.1
34475	TETRACHLOROETHENE	U < 0.1
34506	1,1,1-TRICHLOROETHANE	U < 0.1
34511	1,1,2-TRICHLOROETHANE	U < 0.1
39180	TRICHLOROETHENE	U < 0.1
39488	TRICHLOROFLUOROMETHANE	U < 0.1
39715	VINYL CHLORIDE	U < 0.1

CODE	AROMATIC PURGEABLES	VALUE *
34030	BENZENE	U < 1.0
34301	CHLOROBENZENE	U < 0.1
34536	1,2-DICHLOROBENZENE	U < 0.1
34566	1,3-DICHLOROBENZENE	U < 0.1
34571	1,4-DICHLOROBENZENE	U < 0.1
34371	ETHYL BENZENE	U < 1.0
34010	TOLUENE	PI < 1.0
	O-XYLENE	U < 1.0
	M-XYLENE & P-XYLENE	U < 1.0

## **OTHER PURGEABLES**

Completed-Date: 02/18/94 Time:16:30 By:SDM

Unit supervisor Jerry W. Benjamin  
Date 3-1-94

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Lander Co.  
 I.D./Site No 33-633  
 County 33 Field No. LC-55-04  
 Stream Mile \_\_\_\_\_ Depth 2"  
 Collected: Date 2/8/94 Time 9:20 AM By QS  
 Contact Hazard Inorganic  
 Signature of sampler Mark J. Specht  
 Send Report to Wayne Everett,  
CFO

Sampling Agency  
 APC    DOT  
 DWS    GW  
 SWM    UST  
 EEP    PASI  
 SF    WPC  
 other (specify): \_\_\_\_\_

Sample Type  
 Soil  
 Sediment  
 Water  
 Other

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient

Date Priority needed:  
3/14/94

Billing Code (required)

327.38-11

Field Comments: \_\_\_\_\_

ORGANIC ANALYSIS  
 Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 09020173Date received 2/8/94Time received 1955 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	v vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SOIL  
County: 33  
Field No: LC-SS-04  
Collected-Date 02/08/94 Time 09:20 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0173  
Branch Lab Number  
Received-Date 02/08/94 Time 14:55 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 0.1
32101	BROMODICHLOROMETHANE	U < 0.1
34413	BROMOMETHANE	U < 0.1
32102	CARBON TETRACHLORIDE	U < 0.1
34301	CHLOROBENZENE	U < 0.1
34311	CHLOROETHANE	U < 0.1
34576	2-CHLOROETHYL VINYL ETHER	U < 0.1
32106	CHLOROFORM	U < 0.1
34418	CHLOROMETHANE	U < 0.1
32105	DIBROMOCHLOROMETHANE	U < 0.1
34536	1,2-DICHLOROBENZENE	U < 0.1
34566	1,3-DICHLOROBENZENE	U < 0.1
34571	1,4-DICHLOROBENZENE	U < 0.1
34668	DICHLORODIFLUOROMETHANE	U < 0.1
34496	1,1-DICHLOROETHANE	U < 0.1
34531	1,2-DICHLOROETHANE	U < 0.1
34501	1,1-DICHLOROETHENE	U < 0.1
	CIS-1,2-DICHLOROETHENE	U < 0.1
34546	TRANS-1,2-DICHLOROETHENE	U < 0.1
34541	1,2-DICHLOROPROPANE	U < 0.1
34045	CIS-1,3-DICHLOROPROPENE	U < 0.1
34699	TRANS-1,3-DICHLOROPROPENE	U < 0.1
34423	METHYLENE CHLORIDE	0.8
34516	1,1,2,2-TETRACHLOROETHANE	U < 0.1
34475	TETRACHLOROETHENE	U < 0.1
34506	1,1,1-TRICHLOROETHANE	U < 0.1
34511	1,1,2-TRICHLOROETHANE	U < 0.1
39180	TRICHLOROETHENE	U < 0.1
39488	TRICHLOROFUOROMETHANE	U < 0.1
39715	VINYL CHLORIDE	U < 0.1

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	PI < 1.0
34301	CHLOROBENZENE	U < 0.1
34536	1,2-DICHLOROBENZENE	U < 0.1
34566	1,3-DICHLOROBENZENE	U < 0.1
34571	1,4-DICHLOROBENZENE	U < 0.1
34371	ETHYL BENZENE	U < 1.0
34010	TOLUENE	PI < 1.0
	O-XYLENE	U < 1.0
	M-XYLENE & P-XYLENE	U < 1.0

## OTHER PURGEABLES

Completed-Date: 02/18/94 Time:17:20 By:SDM

Unit supervisor Jerry W. Bingham  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Lamles Co.  
 I.D./Site No 33-633  
 County 33 Field No LC-55-05  
 Stream Mile \_\_\_\_\_ Depth 1"  
 Collected: Date 2-7-94 Time 1:10 PM By CJS  
 Contact Hazard Unknown  
 Signature of sampler Rraig Hannard  
 Send Report to Wayne Everett  
CFO

Sampling Agency  
 APC    DOT  
 DWS    GW  
 SWM    UST  
 EEP    PASI  
 SF    WPC  
 other (specify): \_\_\_\_\_

Sample Type  
 Soil  
 Sediment  
 Water  
 Other

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient

Date Priority needed:  
3/14/94

Billing Code (required)  
327.38-11

Field Comments: \_\_\_\_\_  
 \_\_\_\_\_

ORGANIC ANALYSIS  
 Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 94020147

Date received 2/8/94

Time received 1010 by LOB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	v vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

## Other

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SOIL  
County: 33  
Field No: LC-SS-05  
Collected-Date 02/07/94 Time 13:10 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0147  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE HALOGENATED BURGEEABLES VALUE @

## **CODE HALOGENATED FLUOROCARBONS**

32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	PI < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

## OTHER PURGEABLES

Completed-Date: 02/16/84 Time: 20:19 By: C

@Reporting Units, unless otherwise noted:  
water. ug/l; sediment.ug/kg

Completed-Date: 02/16/94 Time:20:19 By:CS  
Unit supervisor Jerry W. Dingman  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments:U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<u>Landes Co.</u>
I.D./Site No.	<u>33-633</u>
County	<u>33</u>
Field No.	<u>LC-55-06</u>
Stream Mile	<u>1</u>
Depth	<u>1"</u>
Collected Date	<u>12-7-94</u>
Time	<u>1:20pm</u>
By	<u>CJS</u>
Contact Hazard	<u>Unknown</u>
Signature of sampler	<u>Ron Hammar</u>
Send Report to	<u>Wayne Everett</u> <u>CFO</u>

Sampling Agency	
APC	DOT
DWS	GW
SWM	UST
EEP	<input checked="" type="checkbox"/> PASI
SF	WPC
other (specify):	
Billing Code (required)	
<u>327.38-11</u>	
Sample Type	<input checked="" type="checkbox"/> Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Water <input type="checkbox"/> Other
Sample Priority	<input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient
Date Priority needed:	<u>3/14/94</u>
Field Comments:	

**ORGANIC ANALYSIS**  
 Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 9402048Date received 2/8/94Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	v vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene
	:

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SOIL  
County: 33  
Field No: LC-SS-06  
Collected-Date 02/07/94 Time 13:20 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0148  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

## OTHER PURGEABLES

Completed-Date: 03/16/94 Time:20:54 By:G

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg

Unit supervisor Jerry W. Burgeana  
Date 3-1-54  
Signature of supervisor indicates that the  
work was performed in accordance with  
federally approved procedures where avail-  
able and in compliance with current quality  
assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED  
DENOTE SAMPLE QUANTITATION LIMITS.

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source <u>andes G.</u>	Sampling Agency <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input checked="" type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____	Sample Type <input type="checkbox"/> Soil <input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Water <input type="checkbox"/> Other _____	Sample Priority <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient
I.D./Site No. <u>33-633</u>	Field No. <u>LC-SD-01</u>		Date Priority needed: <u>3/14/94</u>
County <u>33</u>	Stream Mile _____	Depth <u>2"</u>	
Collected: Date <u>2-7-94</u>	Time <u>8:30</u>	By <u>CSS</u>	
Contact Hazard <u>Unknown</u>	Billing Code (required)	Field Comments: _____	
Signature of sampler <u>Wayne Everett</u>	<u>327.38-11</u>		
Send Report to <u>CFO</u>			

## ORGANIC ANALYSIS

## Purgeables and Petroleum Hydrocarbons

For lab use only

**Laboratory Number**

Section 1

**Time Received**

Reviewed by

	*	Halogenated
32104		bromoform
32101		bromodichloromethane
34413		bromomethane
32102		carbon tetrachloride
34301		chlorobenzene
34311		chloroethane
34576		2-chloroethylvinyl ether
32106		chloroform
34418		chloromethane
32105		dibromochloromethane
34536		1,2-dichlorobenzene
34566		1,3-dichlorobenzene
34571		1,4-dichlorobenzene
34668		dichlorodifluoromethane
34496		1,1-dichloroethane
34531		1,2-dichloroethane
34501		1,1-dichloroethene
		cis-1,2-dichloroethene
34546		trans-1,2-dichloroethene
34541		1,2-dichloropropane
34045		cis-1,3-dichloropropene
34699		trans-1,3-dichloropropene
34423		methylene chloride
34516		1,1,2,2-tetrachloroethane

<ul style="list-style-type: none"> <li>* Petroleum Hydrocarbons</li>   <li>Gasoline Range Organics</li> <li>Diesel Range Organics</li> </ul>	<p><b>Additives:</b></p> <ul style="list-style-type: none"> <li>Methyl tert-butyl ether</li> <li>diisopropyl ether</li> </ul>
--	---

\* please check desired parameters

Lab Comments:

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

**Sample Priority:**

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SEDIMENT  
County: 33  
Field No: LC-SD-01  
Collected-Date 02/07/94 Time 08:30 By CJS  
Date Priority Needed 03/11/94

Laboratory Number 94-02-0141  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE @
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	3.3
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	P1 < 2.5

## OTHER PURGEABLES

NOTE: SAMPLE QUANTITATED ON GC/MS

Completed-Date: 02/16/94 Time:16:48 By:CS

@Reporting Units, unless otherwise noted:  
water ug/l; sediment ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

**STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES**

Sample Source Wardles Co.  
I.D./Site No 33-633  
County 33 Field No. LC-SD-02  
Stream Mile \_\_\_\_\_ Depth 4"  
Collected: Date 2-7-94 Time 8:55 By CJS  
Contact Hazard Hazardous  
Signature of sampler Mig. Lawrence  
Send Report to Wayne Everett,  
CFO

<p><b>Sampling Agency</b></p> <p><input type="checkbox"/> APC    <input type="checkbox"/> DOT</p> <p><input type="checkbox"/> DWS    <input type="checkbox"/> GW</p> <p><input type="checkbox"/> SWM    <input type="checkbox"/> UST</p> <p><input checked="" type="checkbox"/> EEP    <input checked="" type="checkbox"/> PASI</p> <p><input checked="" type="checkbox"/> SF    <input type="checkbox"/> WPC</p> <p><input type="checkbox"/> other (specify): _____</p>	<p><b>Sample Type</b></p> <p><input checked="" type="checkbox"/> Soil</p> <p><input checked="" type="checkbox"/> Sediment</p> <p><input type="checkbox"/> Water</p> <p><input type="checkbox"/> Other _____</p>	<p><b>Sample Priority</b></p> <p><input checked="" type="checkbox"/> Emergency</p> <p><input checked="" type="checkbox"/> Legal</p> <p><input checked="" type="checkbox"/> Routine</p> <p><input type="checkbox"/> Ambient</p> <p>Date Priority needed: <u>3/14/94</u></p>
<p><b>Billing Code (required)</b></p> <p><u>327.38-11</u></p> <p><b>Field Comments:</b> _____</p>		

ORGANIC ANALYSIS

## Purgeables and Petroleum Hydrocarbons

*For lab use only*

Laboratory Number 4102042

Date received 2/8/94

Time received 10/10 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

### Reviewed by

	*	Halogenated
32104		bromoform
32101		bromodichloromethane
34413		bromomethane
32102		carbon tetrachloride
34301		chlorobenzene
34311		chloroethane
34576		2-chloroethylvinyl ether
32106		chloroform
34418		chloromethane
32105		dibromochloromethane
34536		1,2-dichlorobenzene
34566		1,3-dichlorobenzene
34571		1,4-dichlorobenzene
34668		dichlorodifluoromethane
34496		1,1-dichloroethane
34531		1,2-dichloroethane
34501		1,1-dichloroethene
		cis-1,2-dichloroethene
34546		trans-1,2-dichloroethene
34541		1,2-dichloropropane
34045		cis-1,3-dichloropropene
34699		trans-1,3-dichloropropene
34423		methylene chloride
34516		1,1,2,2-tetrachloroethane

\* Petroleum Hydrocarbons

Gasoline Range Organics

Diesel Range Organics

Additives:

Methyl tert-butyl ether

diisopropyl ether

\* please check desired parameters

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SEDIMENT  
County: 33  
Field No: LC-SD-02  
Collected-Date 02/07/94 Time 08:55 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0142  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPAÑE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

## OTHER PURGEABLES

NOTE SAMPLE QUANTITATED ON GC/MS

Completed-Date: 02/16/94 Time:17:23 By:CS

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-91  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<i>Anderson Co.</i>
I.D./Site No.	<u>33-633</u>
County	<u>33</u>
Stream Mile	<u>1"</u>
Collected: Date	<u>2-7-94</u>
Contact Hazard	<u>Unknown</u>
Signature of sampler	<i>Ray Langford</i>
Send Report to	<u>Wayne Everett</u>
CFO	

Sampling Agency  
 APC    DOT  
 DWS    GW  
 SWM    UST  
 EEP    PASI  
 SF    WPC  
 other (specify): \_\_\_\_\_

Sample Type  
 Soil  
 Sediment  
 Water  
 Other \_\_\_\_\_

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient

Date Priority needed:  
3/14/94

Billing Code (required)  
327.38-11

Field Comments: \_\_\_\_\_

**ORGANIC ANALYSIS**  
Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 94020143

Date received 2/8/94

Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

**Halogenated**

32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

**Halogenated**

34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	v vinyl chloride

**Aromatic**

34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

**Other**

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SEDIMENT  
County: 33  
Field No: LC-SD-03  
Collected-Date 02/07/94 Time 09:10 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0143  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE @
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	0.8
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

## OTHER PURGEABLES

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Completed-Date: 02/16/94 Time:17:58 By:CS

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Bongard  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source samples 6  
 ID/Site No 33-633  
 County 33 Field No. LC-SD-04  
 Stream Mile \_\_\_\_\_ Depth \_\_\_\_\_  
 Collected Date 2-7-94 Time 10:15 AM By CJS  
 Contact Hazard Unknown  
 Signature of sampler raig slaypner  
 Send Report to Wayne Everett,  
CFO

Sampling Agency	APC	DOT	Sample	Soil	Sample Priority
	DWS	GW	Sediment	X	Emergency
	SWM	UST	Water	X	Legal
	EEP	PASI	Other	X	Routine
	SF	WPC			Ambient
other (specify):					Date Priority needed:
					<u>3/14/94</u>
Billing Code (required)			Field Comments:		
<u>327.38-11</u>					

ORGANIC ANALYSIS  
Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 94020144Date received 2/8/94Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	v vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene
	Other

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.

Sample Site Code: 33-633

Sample Type: SEDIMENT

County: 33

Field No: LC-SD-04

Collected-Date 02/08/94 Time 10:15 By CJS

Date Priority Needed 03/14/94

Laboratory Number 94-02-0144

Branch Lab Number

Received-Date 02/08/94 Time 10:10 By LJB

Sampling Agency: HWM/11

CODE HALOGENATED PURGEABLES VALUE @

32104 BROMOFORM U <2.5  
32101 BROMODICHLOROMETHANE U <2.5  
34413 BROMOMETHANE U <5.0  
32102 CARBON TETRACHLORIDE U <2.5  
34301 CHLOROBENZENE U <2.5  
34311 CHLOROETHANE U <5.0  
34576 2-CHLOROETHYL VINYL ETHER U <2.5  
32106 CHLOROFORM U <2.5  
34418 CHLOROMETHANE U <5.0  
32105 DIBROMOCHLOROMETHANE U <2.5  
34536 1,2-DICHLOROBENZENE U <2.5  
34566 1,3-DICHLOROBENZENE U <2.5  
34571 1,4-DICHLOROBENZENE U <2.5  
34668 DICHLORODIFLUOROMETHANE U <5.0  
34496 1,1-DICHLOROETHANE U <2.5  
34531 1,2-DICHLOROETHANE U <2.5  
34501 1,1-DICHLOROETHENE U <2.5  
CIS-1,2-DICHLOROETHENE U <2.5  
34546 TRANS-1,2-DICHLOROETHENE U <2.5  
34541 1,2-DICHLOROPROPANE U <2.5  
34045 CIS-1,3-DICHLOROPROPENE U <2.5  
34699 TRANS-1,3-DICHLOROPROPENE U <2.5  
34423 METHYLENE CHLORIDE U <2.5  
34516 1,1,2,2-TETRACHLOROETHANE U <2.5  
34475 TETRACHLOROETHENE U <2.5  
34506 1,1,1-TRICHLOROETHANE U <2.5  
34511 1,1,2-TRICHLOROETHANE U <2.5  
39180 TRICHLOROETHENE U <2.5  
39488 TRICHLOROFUOROMETHANE U <5.0  
39715 VINYL CHLORIDE U <5.0

CODE AROMATIC PURGEABLES VALUE @

34030 BENZENE U <2.5  
34301 CHLOROBENZENE U <2.5  
34536 1,2-DICHLOROBENZENE U <2.5  
34566 1,3-DICHLOROBENZENE U <2.5  
34571 1,4-DICHLOROBENZENE U <2.5  
34371 ETHYL BENZENE U <2.5  
34010 TOLUENE U <2.5  
O-XYLENE U <2.5  
M-XYLENE & P-XYLENE U <2.5

OTHER PURGEABLES

\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_

NOTE: SAMPLE QUANTITATED ON GC/MS

Completed-Date: 02/16/94 Time:18:33 By:CS

Unit supervisor Jerry W. Bingham  
Date 3-1-94

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source andes Co.I.D./Site No 33-633County 33 Field No. LC-SD-05Stream Mile \_\_\_\_\_ Depth 2" PMCollected Date 2/7/94 Time 2:00 PM By CJSContact Hazard UnknownSignature of sampler Ray HarrellSend Report to Wayne EverettCFO

Sampling Agency  
 APC     DOT  
 DWS     GW  
 SWM     UST  
 EEP     PASI  
 SF     WPC  
 other (specify): \_\_\_\_\_

Billing Code (required)

327.38-11

Sample Type  
 Soil  
 Sediment  
 Water  
 Other

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient

Date Priority needed:

3/14/94

Field Comments: \_\_\_\_\_

ORGANIC ANALYSIS  
Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 9A020145Date received 2/8/94Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

## \* Halogenated

32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

## \* Halogenated

34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethylene
39488	trichlorofluoromethane
39715	v vinyl chloride

## \* Aromatic

34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

## Other

* Gasoline Range Organics
Diesel Range Organics
Additives:
Methyl tert-butyl ether
diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS. PURGEABLES

**Sample Priority:**

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SEDIMENT  
County: 33  
Field No: LC-SD-05  
Collected-Date 02/07/94 Time 14:00 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0145  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROpane	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

#### **OTHER PURGEABLES**

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Completed-Date: 02/16/94 Time: 19:08 By:CS

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-54  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## ENVIRONMENTAL LABORATORIES

Sample Source andes Co.  
 I.D./Site No 33-633  
 County 33 Field No. LC-WS-01  
 Stream Mile \_\_\_\_\_ Depth 2"  
 Collected: Date 2/7/94 Time 10:40 AM By CJS  
 Contact Hazard Unknown  
 Signature of sampler Craig Slampard  
 Send Report to Wayne Everett  
CFO

Sampling Agency  
 APC     DOT  
 DWS     GW  
 SWM     UST  
 EEP     PASI  
 SF     WPC  
 other (specify): \_\_\_\_\_

Billing Code (required)

327.38-11

Sample Type  
 Soil  
 Sediment  
 Water  
 Other  
Waste

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient

Date Priority needed:  
3/4/94

Field Comments:

ORGANIC ANALYSIS  
Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 94020149

Date received 2/8/94

Time received 1010 by CJS

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

## Halogenated

32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
34546	cis-1,2-dichloroethene
34541	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

## Halogenated

34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	V vinyl chloride

## Aromatic

34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

## Other

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS. PURGEABLES

**Sample Priority:**

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: WASTE  
County: 33  
Field No: LC-WS-01  
Collected-Date 02/07/94 Time 10:40 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0149  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE @
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	3.4
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

## OTHER PURGEABLES

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Completed-Date: 02/18/94 Time:12:27 By:JWB

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Andes G.  
 I.D./Site No. 33-633  
 County 33 Field No. LCWS-02  
 Stream Mile \_\_\_\_\_ Depth 2"  
 Collected: Date 2/7/94 Time 10:50 AM By CJS  
 Contact Hazard Unharmful  
 Signature of sampler Greg Slavens  
 Send Report to Wayne Everett,  
CFO

Sampling Agency  
 APC    DOT  
 DWS    GW  
 SWM    UST  
 EEP    PASI  
 SF    WPC  
 other (specify): \_\_\_\_\_

Sample Type  
 Soil  
 Sediment  
 Water  
 Other Waste

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient  
 Date Priority needed: 3/14/94

Billing Code (required)  
327.38-11

Field Comments: \_\_\_\_\_

ORGANIC ANALYSIS  
 Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 94020150

Date received 2/8/94

Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

## Halogenated

32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethylene
	cis-1,2-dichloroethylene
34546	trans-1,2-dichloroethylene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

## Halogenated

34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	vinyl chloride

## Aromatic

34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

## Other

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

**Sample Priority:**

Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO,  
Sample Site Code: 33-633  
Sample Type: WASTE  
County: 33  
Field No: LC-WS-02  
Collected-Date 02/07/94 Time 10:50 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0150  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	33
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE @
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

## OTHER PURGEABLES

[View all posts by admin](#) | [View all posts in category](#)

Completed-Date: 02/16/94 Time:10:04 By:CS

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg

Unit supervisor Jerry W. Biggsma  
Date 3-1-74  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<u>andres Co.</u>
ID/Site No	<u>33-633</u>
County	<u>33</u>
Field No.	<u>LC-W5-03</u>
Stream Mile	<u>Depth 2"</u>
Collected Date	<u>2-7-94</u>
Time	<u>11:05</u>
By	<u>CJS</u>
Contact Hazard	<u>Unknown</u>
Signature of sampler	<u>Ray Lammal</u>
Send Report to	<u>Wayne Everett, CFO</u>

Sampling Agency	<input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input checked="" type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____
Sample Type	<input type="checkbox"/> Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Water <input checked="" type="checkbox"/> Other <u>waste</u>
Sample Priority	<input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient
Date Priority needed:	<u>3/14/94</u>
Billing Code (required)	<u>327.38-11</u>
Field Comments:	_____

**ORGANIC ANALYSIS**

Purgeables and Petroleum Hydrocarbons	
For lab use only	
Laboratory Number	<u>91020151</u>
Date received	<u>2/8/94</u>
Time received	<u>10:10</u>
by	<u>LOB</u>
Date reported	_____
Reviewed by	_____

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
34516	cis-1,2-dichloroethene
34541	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	v vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Other
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: WASTE  
County: 33  
Field No: LC-WS-03  
Collected-Date 02/07/94 Time 11:05 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0151  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	3.7
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE	%
34030	BENZENE	U < 2.5	
34301	CHLOROBENZENE	U < 2.5	
34536	1,2-DICHLOROBENZENE	U < 2.5	
34566	1,3-DICHLOROBENZENE	U < 2.5	
34571	1,4-DICHLOROBENZENE	U < 2.5	
34371	ETHYL BENZENE	U < 2.5	
34010	TOLUENE	U < 2.5	
	O-XYLENE	U < 2.5	
	M-XYLENE & P-XYLENE	U < 2.5	

**OTHER PURGEABLES**

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Digitized by srujanika@gmail.com

Completed-Date: 02/19/94 Time:17:23 By:JWB

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Bixby  
Date 3-1-54  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE ENVIRONMENTAL LABORATORIES

Sample Source Landes Co.  
 I.D./Site No. 33-633  
 County 33 Field No. LC-W5-04  
 Stream Mile \_\_\_\_\_ Depth 1"  
 Collected: Date 7-94 Time 11:25 By CJS  
 Contact Hazard Unknown  
 Signature of sampler Wayne Everett  
 Send Report to CFO

Sampling Agency	Agency
APC	DOT
DWS	GW
SWM	UST
EEP	X PASI
SF	WPC
other (specify):	
Sample Type	Sample Priority
Soil	Emergency
Sediment	Legal
Water	Routine
X Other	Ambient
<u>Waste</u>	Date Priority needed: <u>3/14/94</u>
Billing Code (required)	Field Comments:
<u>327.38-11</u>	

ORGANIC ANALYSIS  
 Purgeables and Petroleum Hydrocarbons  
 For lab use only  
 Laboratory Number 94020152  
 Date received 2/8/94  
 Time received 10:10 by LJB  
 Date reported \_\_\_\_\_ by \_\_\_\_\_  
 Reviewed by \_\_\_\_\_

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34113	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34196	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	v vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

**Sample Priority:**

Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.

Sample Site Code: 33-633

Sample Type: WASTE

County: 33

Field No: LC-WS-04

Collected-Date 02/07/94 Time 11:25 By CJS

Date Priority Needed 03/14/94

Laboratory Number 94-02-0152

Branch Lab Number

Received-Date 02/08/94 Time 10:10 By LJB

Sampling Agency: HWM/11

**CODE HALOGENATED PURGEABLES**      **VALUE @**

32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

34030 BENZENE	U < 2.5
34301 CHLOROBENZENE	U < 2.5
34536 1,2-DICHLOROBENZENE	U < 2.5
34566 1,3-DICHLOROBENZENE	U < 2.5
34571 1,4-DICHLOROBENZENE	U < 2.5
34371 ETHYL BENZENE	U < 2.5
34010 TOLUENE	U < 2.5
O-XYLENE	U < 2.5
M-XYLENE & P-XYLENE	U < 2.5

#### **OTHER PURGEABLES**

NOTE: SAMPLE QUANTITATED ON GC/MS

Completed-Date: 02/19/94 Time:17:57 By:JWB

@Reporting Units, unless otherwise noted:  
water ug/l; sediment ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-94  
Signature of supervisor indicates that the  
work was performed in accordance with  
federally approved procedures where avail-  
able and in compliance with current quality  
assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED  
DENOTE SAMPLE QUANTITATION LIMITS.

rcd 4/4 - FDM

TENNESSEE DEPARTMENT OF HEALTH

TE SLIP

FROM RLH	DATE 3-31-94
TO GAM	3-31-94
RAW	

Please review and route as indicated:

- NBO (box on 6th)
- SWM, Attn: Greg Luke, L&C Tower, 5th Floor
- DOT Sampling (see attached)
- Division of Superfund, L&C Tower, Attn.:  
Underground Storage Tanks, L&C Tower, Attn.:  
Chuck Head
- Division of Radiological Health
- Environmental Field Office; Water Pollution,  
Water Supply, Superfund, Underground Storage  
Tanks, Attn.:  
Brick Church Park Drive, Nashville, TN
- Division of Air Pollution Control, Attn.:  
Robert Brawner, Gary Leggett, Charles  
Northington
- Division of Water Pollution Control
- Division of Water Supply, Attn: Robert Foster,  
Tom Moss
- Division of Ground Water Protection
- Chattanooga Field Office; Water Pollution,  
Water Supply, Superfund, Underground Storage  
Tanks, Attn: Wayne Eberett  
540 McCallie, Chattanooga, TN 37402
- Jackson Branch Lab, Attn: RLM
- Knoxville Branch Lab, Attn: EAM
- Aquatic Biology, Basement
- CEM, LQA, 5th floor
- Memphis Basin/Field Office
- Knoxville Basin/Field Office
- Jackson Basin/Field Office
- Johnson City Basin/Field Office
- Other

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	Lander Co.
I.D./Site No.	33-633
County	33
Stream Mile	Depth 2"
Collected: Date	Time 10:00 By CJS
Contact Hazard	Unknown
Signature of sampler	Craig Flannery
Send Report to	Wayne Everett, CFO

Sampling Agency	
— APC	— DOT
— DWS	— GW
— SWM	— UST
— EEP	X PASI
X SF	— WPC
other (specify):	
Billing Code (required)	327.38-11
Sample Type	Sediment X Soil Tissue Water Air Sludge Other _____
Sample Priority	Emergency X Legal X Routine Ambient
Date Priority needed:	3/14/94
Field Comments:	_____

ORGANIC ANALYSIS	
Base/Neutral/Acid Extractables	
For lab use only	
Laboratory Number	94020146
Date received	2/8/94
Time received	1010 by LJB
Date reported	_____ by _____
Reviewed by	_____

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	X PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	X n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	X PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	X acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	X benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dicofol				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	X pyrene	39400	X toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

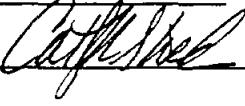
STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SOIL  
 Sample Site Code: 33-633  
 Sample Source: LANDES CO.  
 County: 33  
 Field No: LC-55-01  
 Collected-Date 02/07/94 Time 10:00 By CJS  
 Date Priority Needed 03/14/94

Laboratory Number 94-02-0146  
 Branch Lab Number  
 Received-Date 02/08/94 Time 10:10 By LJB  
 Sampling Agency: HWM/II  
 Sample Priority:  
 Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	U<330	34636	4-BROMOPHENYLPHENYL ETHER	D<330	39508	PCB 1260	U<440
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 7730	34641	4-CHLOROPHENYLPHENYL ETHER	D<330	31549	PCB 1262	U<470
39110	DI-N-BUTYL PHTHALATE	D<330	34386	HEXACHLOROCYCLOPENTADIENE	U<760			
34596	DI-N-OCTYL PHTHALATE	U<330	34391	HEXACHLOROBUTADIENE	U<330			
34336	DIETHYL PHTHALATE	D<330	39700	HEXACHLOROBENZENE	U<330			
34341	DIMETHYL PHTHALATE	U<330	34396	HEXACHLOROETHANE	U<330			
34408	N-NITROSDIMETHYLAMINE	U<1200	34551	1,2,4-TRICHLOROBENZENE	U<330			
34433	N-NITROSDIPHENYLAMINE	U<330	34581	2-CHLORONAPHTHALENE	U<330			
34428	N-NITROSO DI-N-PROPYLAMINE	U<330	39330	ALDRIN	U<7.6			
34408	ISOPHORONE	U<330	39337	ALPHA BHC	U<7.6			
34447	NITROBENZENE	U<330	39338	BETA BHC	U<15.2			
34411	2,4-DINITROTOLUENE	U<330	34259	DELTA BHC	U<15.2			
34426	2,6-DINITROTOLUENE	U<330	39340	GAMMA BHC(LINDANE)	U<7.6			
34205	ACENAPHTHENE	U<330	39350	CHLORDANE	U<190			
34200	ACENAPHTHYLENE	U<330	38310	4,4 DDD	U<19			
34220	ANTHRACENE	D<330	39320	4,4 DDE	U<15			
34526	BENZO(a)ANTHRACENE	D<330	39300	4,4 DDT	U<11			
34247	BENZO(a)PYRENE	D<330	39380	DIELDRIN	U<7.6			
34230	BENZO(b)FLUORANTHENE	D<330	34361	ENDOSULFAN I	U<22			
34521	BENZO(g,h,i)PERYLENE	D<760	34356	ENDOSULFAN II	U<15			
34242	BENZO(k)FLUORANTHENE	D<330	34351	ENDOSULFAN SULFATE	U<11			
34556	DIBENZO(a,h)ANTHRACENE	U<760	39390	ENDRIN	U<15			
34376	FLUORANTHENE	D<330	34366	ENDRIN ALDEHYDE	U<7.6			
34381	FLUORENE	U<330	39410	HEPTACHLOR	U<7.6			
34403	INDENO(1,2,3-cd)PYRENE	U<330	39420	HEPTACHLOR EPOXIDE	U<11.4			
34696	NAPHTHALENE	U<330	39400	TOXAPHENE	U<1100			
34461	PHENANTHRENE	D<330	39480	METHOXYPHENOL	U<53			
34469	PYRENE	D<330	PCB 1016/1242		U<1200			
34320	CHRYSENE	D<330	39488	PCB 1221	U<1300			
34273	BIS(2-CHLOROETHYL)ETHER	U<330	39492	PCB 1232	U<1500			
34278	BIS(2-CHLOROETHOXY)METHANE	U<330	39500	PCB 1248	U<500			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<330	39504	PCB 1254	U<490			

Reporting Units, unless otherwise noted:  
 water, ug/l; sediment,ug/kg;fish,ug/kg

Unit supervisor   
 Date 3-25-96

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
 federally approved procedures where available and in compliance with current quality  
 assurance criteria except as qualified.

Comments::U-UNDETECTED, D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<i>Lander Co.</i>
I.D./Site No.	<i>33-633</i>
County	<i>33</i>
Field No.	<i>LC-SS-02</i>
Stream Mile	<i>Depth 2"</i>
Collected Date	<i>2-8-94</i>
Time	<i>9:00</i>
By	<i>DY</i>
Contact Hazard	<i>Unknown</i>
Signature of sampler	<i>Don Van Hook</i>
Send Report to	<i>Wayne Everett, CFO</i>

Sampling Agency	Sediment	Sample Priority
APC	DOT	Emergency
DWS	GW	<input checked="" type="checkbox"/> Legal
SWM	UST	<input checked="" type="checkbox"/> Routine
EEP	<input checked="" type="checkbox"/> PASI	Ambient
SF	WPC	
other (specify):		Date Priority needed:
		<i>3/14/94</i>
Billing Code (required)	Field Comments:	
<i>327.38-11</i>		

ORGANIC ANALYSIS  
Base/Neutral/Acid Extractables

For lab use only

Laboratory Number *Q7020171*Date received *2/8/94*Time received *1955* by *LSB*

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	<input checked="" type="checkbox"/> di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	<input checked="" type="checkbox"/> PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34597	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	<input checked="" type="checkbox"/> PCB-1262	34640	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	<input checked="" type="checkbox"/> b-BHC				
34200	<input checked="" type="checkbox"/> acenaphthylene	34259	d-BHC				
34220	anthracene	39340	<input checked="" type="checkbox"/> g-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dieldrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SDIL  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SS-02  
Collected-Date 02/08/94 Time 09:00 By DV  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0171  
Branch Lab Number  
Received-Date 02/08/94 Time 14:55 By LJB  
Sampling Agency: HWM/II  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	UK<8900	34636	4-BROMOPHENYLPHENYL ETHER	UK<2200	39508	PCB 1260	UK550
33100	BIS(2-ETHYLHEXYL)PHTHALATE	D102000	34641	4-CHLOROPHENYLPHENYL ETHER	UK<1800	81649	PCB 1262	UK550
39110	DI-N-BUTYL PHTHALATE	UK<1800	34386	HEXACHLOROCYCLOPENTADIENE	UK<2200			
34596	DI-N-OCTYL PHTHALATE	UK<27000	34391	HEXACHLOROBUTADIENE	UK<890			
34336	DIETHYL PHTHALATE	UK<890	39700	HEXACHLOROBENZENE	UK<890			
34341	DIMETHYL PHTHALATE	UK<890	34396	HEXACHLOROETHANE	UK<890			
34438	N-NITROSDIMETHYLAMINE	UK<1800	34551	1,2,4-TRICHLOROBENZENE	UK<890			
34433	N-NITROSDIPHENYLAMINE	UK<1800	34581	2-CHLORONAPHTHALENE	UK<890			
34428	N-NITROSO DI-N-PROPYLAMINE	UK<890	39330	ALDRIN	UK9.4			
34408	ISOPHORONE	UK<890	39337	ALPHA BHC	UK9.4			
34447	NITROBENZENE	UK<890	39338	BETA BHC	UK19			
34611	2,4-DINITROTOLUENE	UK<2200	34259	DELTA BHC	UK12			
6	2,6-DINITROTOLUENE	UK<2200	39340	GAMMA BHC(LINDANE)	UK10			
34205	ACENAPHTHENE	UK<890	39350	CHLORDANE	UK<220			
34200	ACENAPHTHYLENE	UK<890	38310	4,4 DDD	UK24			
34220	ANTHRACENE	UK<2200	39320	4,4 DDE	UK17			
34526	BENZO(a)ANTHRACENE	UK<1800	39300	4,4 DDT	UK12			
34247	BENZO(a)PYRENE	D<2200	39380	DIELDRIN	D<8.7			
34230	BENZO(b)FLUORANTHENE	UK<3600	34361	ENDOSULFAN I	UK29			
34521	BENZO(ghi)PERYLENE	UK<1800	34356	ENDOSULFAN II	UK18			
34242	BENZO(k)FLUORANTHENE	UK<1800	34351	ENDOSULFAN SULFATE	UK13			
34556	DIBENZO(a,h)ANTHRACENE	UK<3600	39390	ENDRIN	UK19			
34376	FLUORANTHENE	UK<4500	34366	ENDRIN ALDEHYDE	UK9.4			
34381	FLUORENE	UK<890	39410	HEPTACHLOR	UK9.4			
34403	INDENO(1,2,3-cd)PYRENE	D 1810	39420	HEPTACHLOR EPOXIDE	UK12			
34696	NAPHTHALENE	D<890	39400	TOXAPHENE	UK<650			
34461	PHENANTHRENE	UK<2200	39480	METHOXYCHLOR	UK66			
34469	PYRENE	D 5500		PCB 1016/1242	UK<690			
34320	CHRYSENE	UK<4500	39488	PCB 1221	UK<760			
34273	BIS(2-CHLOROETHYL)ETHER	UK<890	39492	PCB 1232	UK<860			
34278	BIS(2-CHLOROETHOXY)METHANE	UK<890	39500	PCB 1248	UK<580			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK<890	39504	PCB 1254	UK<550			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg; fish,mg/kg

Unit supervisor J. H. H. Strel  
Date 3-24-94

Completed-Date:03/22/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in compliance with current quality  
assurance criteria except as qualified.

Comments: U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SOIL  
 Sample Site Code: 33-633  
 Sample Source: LANDES CO.  
 County: 33  
 Field No: LC-SS-03  
 Collected-Date 02/08/94 Time 09:10 By CJS  
 Date Priority Needed 03/14/94

Laboratory Number 94-02-0172  
 Branch Lab Number  
 Received-Date 02/08/94 Time 14:55 By LJB  
 Sampling Agency: HWM/11  
 Sample Priority:  
 Emergency[N] Legal[Y] Routine[N] Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	U<2400	34636	4-BROMOPHENYLPHENYL ETHER	U<330	39508	PCB 1260	U<1500
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 4050	34641	4-CHLOROPHENYLPHENYL ETHER	U<330	81649	PCB 1262	U<1500
39110	DI-N-BUTYL PHTHALATE	U<480	34386	HEXACHLOROCYCLOPENTADIENE	U<600			
34596	DI-N-OCTYL PHTHALATE	U<3000	34391	HEXACHLOROBUTADIENE	U<330			
34336	DIETHYL PHTHALATE	D<480	39700	HEXACHLOROBENZENE	U<330			
34341	DIMETHYL PHTHALATE	U<330	34396	HEXACHLOROETHANE	U<330			
34438	N-NITROSODIMETHYLAMINE	U<970	34551	1,2,4-TRICHLOROBENZENE	U<330			
34433	N-NITROSODIPHENYLAMINE	U<330	34581	2-CHLORONAPHTHALENE	U<330			
34428	N-NITROSO DI-N-PROPYLAMINE	U<330	39330	ALDRIN	U<25			
34408	ISOPHORONE	U<330	39337	ALPHA BHC	U<25			
34447	NITROBENZENE	U<330	39338	BETA BHC	U<50			
34511	2,4-DINITROTOLUENE	U<600	34259	DELTA BHC	U<32			
( 6	2,6-DINITROTOLUENE	U<330	39340	GAMMA BHC(LINDANE)	U<32			
34205	ACENAPHTHENE	U<330	39350	CHLORDANE	U<600			
34200	ACENAPHTHYLENE	U<330	38310	4,4 DDD	U<64			
34220	ANTHRACENE	U<330	39320	4,4 DDE	U<47			
34526	BENZO(a)ANTHRACENE	U<1200	39300	4,4 DBT	U<32			
34247	BENZO(a)PYRENE	U<480	39380	DIELDRIN	D<23			
34230	BENZO(b)FLUORANTHENE	U<480	34361	ENDOSULFAN I	U<77			
34521	BENZO(ghi)PERYLENE	D 585	34356	ENDOSULFAN II	U<99			
34242	BENZO(k)FLUORANTHENE	U<480	34351	ENDOSULFAN SULFATE	U<35			
34556	DIBENZO(a,h)ANTHRACENE	D 1230	39390	ENDRIN	U<52			
34376	FLUORANTHENE	U<480	34366	ENDRIN ALDEHYDE	U<25			
34381	FLUORENE	U<330	39410	HEPTACHLOR	U<28			
34403	INDENO(1,2,3-cd)PYRENE	D 728	39420	HEPTACHLOR EPOXIDE	U<32			
34696	NAPHTHALENE	D<330	39400	TOXAPHENE	U<1700			
34461	PHENANTHRENE	U<330	39480	METHOXYPYRENE	U<180			
34469	PYRENE	U<480	PCB 1016/1242	U<1900				
34320	CHRYSENE	U<1200	39488	PCB 1221	U<4100			
34273	BIS(2-CHLOROETHYL)ETHER	U<330	39492	PCB 1232	U<2300			
34278	BIS(2-CHLOROETHOXY)METHANE	U<330	39500	PCB 1248	U<1600			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<330	39504	PCB 1254	U<1500			

Reporting Units, unless otherwise noted:  
 water, ug/l; sediment, ug/kg; fish, mg/kg

Unit supervisor *[Signature]*  
 Date *3/29/94*

Completed-Date:03/22/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
 federally approved procedures where available and in compliance with current quality  
 assurance criteria except as qualified.

Comments: U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	Lander Co.
I.D./Site No.	33-633
County	33
Stream Mile	Field No. LC-SS-04
Collected: Date	Time
Contact Hazard	Unknown
Signature of sampler	Read A. Spangler
Send Report to	Wayne Everett CFO

Sampling Agency	
— APC	— DOT
— DWS	— GW
— SWM	— UST
— EEP	<input checked="" type="checkbox"/> PASI
<input checked="" type="checkbox"/> SF	— WPC
— other (specify):	
Billing Code (required)	
327.38-11	
Sample Type	
— Sediment	
<input checked="" type="checkbox"/> Soil	
— Tissue	
— Water	
— Air	
— sludge	
Other	
Sample Priority	
Emergency	
<input checked="" type="checkbox"/> Legal	
<input checked="" type="checkbox"/> Routine	
Ambient	
Date Priority needed:	3/14/94
Field Comments:	

ORGANIC ANALYSIS  
Base/Neutral/Acid Extractables

For lab use only  
 Laboratory Number 94020173  
 Date received 2/8/94  
 Time received 1455 by LJB  
 Date reported \_\_\_\_\_ by \_\_\_\_\_  
 Reviewed by \_\_\_\_\_

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(gi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dieldrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

### CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

#### Sample Custody

- |    |                              |   |   |
|----|------------------------------|---|---|
| 1. | Collected by<br>Delivered to | <u>Curtis Spangler</u><br><u>GEYhance</u> | Date 2/8/94 time 9:20 AM<br>Date 7/8/94 time 10:00 AM |
| 2. | Received by<br>Delivered to  |   | Date _____ time _____<br>Date _____ time _____        |
| 3. | Received by<br>Delivered to  |   | Date _____ time _____<br>Date _____ time _____        |
| 4. | Received by<br>Delivered to  |   | Date _____ time _____<br>Date _____ time _____        |
| 5. | Received in Lab by           | <u>Teo Barrocer</u>                       | Date 2/8/94 time 1955                                 |
| 6. | Logged in by                 | <u>Teo Barrocer</u>                       | Date 2/8/94 time 1955                                 |

#### Additional information

7. Nearest town or city \_\_\_\_\_
8. Names of others present at time sample collected \_\_\_\_\_
9. Approximate volume of sample \_\_\_\_\_
10. Number of other samples collected at same time at this point \_\_\_\_\_
11. Describe field collection procedure and special handling or preservation of this sample  
\_\_\_\_\_  
\_\_\_\_\_
12. Describe how sample transported to laboratory \_\_\_\_\_
13. Sample sealed by \_\_\_\_\_ Date sample sealed \_\_\_\_\_
14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SOIL  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SS-04  
Collected-Date 02/08/94 Time 09:20 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0173  
Branch Lab Number  
Received-Date 02/08/94 Time 14:55 By LJB  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	U<6.6*	34636	4-BROMOPHENYLPHENYL ETHER	U<2.6	39508	PCB 1260	U<3.1
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 29.2	34641	4-CHLOROPHENYLPHENYL ETHER	U<2.6	81649	PCB 1262	U<3.1
39110	DI-N-BUTYL PHTHALATE	U<2.6	34386	HEXACHLOROCYCLOPENTADIENE	U<6.6			
34596	DI-N-OCTYL PHTHALATE	U<13	34391	HEXACHLOROBUTADIENE	U<2.6			
34336	DIETHYL PHTHALATE	D<2.6	39700	HEXACHLOROBENZENE	U<2.6			
34341	DIMETHYL PHTHALATE	U<2.6	34396	HEXACHLOROETHANE	U<2.6			
34438	N-NITROSDIMETHYLAMINE	U<2.1	34551	1,2,4-TRICHLOROBENZENE	U<2.6			
34433	N-NITROSDIPHENYLAMINE	U<2.6	34581	2-CHLORONAPHTHALENE	U<2.6			
34428	N-NITROSO DI-N-PROPYLAMINE	U<2.6	39330	ALDRIN	U<0.055	34552	4-CHLORO-3-METHYL PHENOL	U<2.6
34408	ISOPHORONE	U<2.6	39337	ALPHA BHC	U<0.055	34586	2-CHLOROPHENOL	U<2.6
34447	NITROBENZENE	U<2.6	39338	BETA BHC	U<0.11	34601	2,4-DICHLOROPHENOL	U<2.6
34611	2,4-DINITROTOLUENE	U<2.6	34259	DELTA BHC	U<0.072	34606	2,4-DIMETHYLPHENOL	U<2.6
26	2,6-DINITROTOLUENE	U<2.6	39340	GAMMA BHC(LINDANE)	U<0.053	34616	2,4-DINITROPHENOL	U<160
34205	ACENAPHTHENE	U<2.6	39350	CHLORDANE	U<1.3	34657	2-METHYL-4,6-DINITROPHENOL	U<33
34200	ACENAPHTHYLENE	D<2.6	38310	4,4 DDD	U<0.14	34591	2-NITROPHENOL	U<2.6
34220	ANTHRACENE	D<2.6	39320	4,4 DDE	U<0.10	34646	4-NITROPHENOL	U<26
34526	BENZO(a)ANTHRACENE	D 22.0	39300	4,4 DDT	U<0.069	39032	PENTACHLOROPHENOL	U<26
34247	BENZO(a)PYRENE	D 13.8	39380	DIELDRIN	D<0.051	34694	PHENOL	U<2.6
34230	BENZO(b)FLUORANTHENE	D#36.9	34361	ENDOSULFAN I	U<0.17	34681	2,4,6-TRICHLOROPHENOL	U<2.6
34521	BENZO(ghi)PERYLENE	D 11.7	34356	ENDOSULFAN II	U<0.11			
34242	BENZO(k)FLUORANTHENE	D#	34351	ENDOSULFAN SULFATE	U<0.077			
34556	DIBENZO(a,h)ANTHRACENE	D 8.75	39390	ENDRIN	U<0.11			
34376	FLUORANTHENE	D 26.7	34366	ENDRIN ALDEHYDE	U<0.055			
34381	FLUORENE	D<2.6	39410	HEPTACHLOR	D<0.055			
34403	INDENO(1,2,3-cd)PYRENE	D 19.2	39420	HEPTACHLOR EPoxide	U<0.071			
34696	NAPHTHALENE	D<2.6	39400	TOXAPHENE	U<3.3			
34461	PHENANTHRENE	D 5.17	39480	METHOXYPHCLDR	U<0.39			
34469	PYRENE	D 24.3		PCB 1016/1242	U<4.1			
34320	CHRYSENE	D 29.4	39488	PCB 1221	U<4.5			
34273	BIS(2-CHLOROETHYL)ETHER	U<2.6	39492	PCB 1232	U<5.1			
34278	BIS(2-CHLOROETHOXY)METHANE	U<2.6	39500	PCB 1248	U<3.4			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<2.6	39504	PCB 1254	U<3.2			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg; fish,ag/kg

Unit supervisor *Craig J. Shad*  
Date 3-29-94

Completed-Date:03/22/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in compliance with current quality  
assurance criteria except as qualified.

Comments: U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.  
\*ALL RESULTS IN MG/KG (PPM). #BOTH PRESENT-MEASURED AS BENZO(B)FLUORANTHENE.

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Landes Co.  
I.D./Site No 33-633  
County 33 Field No. LC-SS-01  
Stream Mile \_\_\_\_\_ Depth 1"  
Collected: Date 2/7/94 Time 1:10 PM By CJ  
Contact Hazard Unknown  
Signature of sampler Tom Hammarby  
Send Report to Wayne Everett

Sampling Agency	Sample Type	Sample Priority
<input type="checkbox"/> APC <input type="checkbox"/> DOT	Sediment	<input type="checkbox"/> Emergency
<input type="checkbox"/> DWS <input type="checkbox"/> GW	<input checked="" type="checkbox"/> Soil	<input checked="" type="checkbox"/> Legal
<input type="checkbox"/> SWM <input type="checkbox"/> UST	<input type="checkbox"/> Tissue	<input checked="" type="checkbox"/> Routine
<input checked="" type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Water	<input type="checkbox"/> Ambient
<input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC	<input type="checkbox"/> Air	
<input type="checkbox"/> other (specify): <hr/>	<input type="checkbox"/> sludge	Date Priority needed:
	<input type="checkbox"/> Other	<hr/> 3/14/94 <hr/>
Billing Code (required)	Field Comments: <hr/>	
327.38-11		

ORGANIC ANAL	
Base/Neutral/Acid Extractables	
<i>For lab use only</i>	
Laboratory Number	<u>94020147</u>
Date received	<u>2/8/94</u>
Time received	<u>1010</u>
	by <u>LJB</u>
Date reported	by _____
Reviewed by	_____

	Base/Neutral
34292	butylbenzylphthalate
39100	bis(2-ethylhexyl)phthalate
39110	di-n-butylphthalate
34596	di-n-octylphthalate
34336	diethylphthalate
34341	dimethylphthalate
34438	n-nitrosodimethylamine
34433	n-nitrosodiphenylamine
34428	n-nitroso di-n-propylamine
34408	isophorone
34447	nitrobenzene
34611	2,4-dinitrotoluene
34626	2,6-dinitrotoluene
34205	acenaphthene
34200	acenaphthylene
34220	anthracene
34526	benzo(a)anthracene
34247	benzo(a)pyrene
34230	benzo(b)fluoranthene
34521	benzo(ghi)perylene
34242	benzo(k)fluoranthene
34320	chrysene
34556	dibenzo(a,h)anthracene
34376	fluoranthene
34381	fluorene
34403	indeno(1,2,3-cd)pyrene
34696	naphthalene
34461	phenanthrene
34469	pyrene

	*	Base/Neutral
34273		bis(2-chloroethyl) ether
34278		bis(2-chlorooxy)methane
34283		bis(2-chloroisopropyl) ether
34636		4-bromophenylphenyl ether
34641		4-chlorophenylphenyl ether
34386		hexachlorocyclopentadiene
34391		hexachlorobutadiene
39700		hexachlorobenzene
34396		hexachloroethane
34551		1,2,4-trichlorobenzene
34581		2-chloronaphthalene
39330		aldrin
39337		a-BHC
39338		b-BHC
34259		d-BHC
39340		g-BHC (lindane)
39350		chlordan
38310		4,4'-DDD
39320		4,4'-DDE
39300		4,4'-DDT
39380		diclorin
34361		endosulfan I
34356		endosulfan II
34351		endosulfan sulfate
39390		endrin
34366		endrin aldehyde
39410		heptachlor
39420		heptachlor epoxide
39400		toxaphene

\* please check desired parameter

### Lab Comments:

STATE OF TENNESSEE  
 ENVIRONMENTAL LABORATORIES  
 ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SOIL  
 Sample Site Code: 33-633  
 Sample Source: LANDES CO.  
 County: 33  
 Field No: LC-SS-05  
 Collected-Date 02/07/94 Time 13:10 By CJS  
 Date Priority Needed 03/14/94

Laboratory Number 94-02-0147  
 Branch Lab Number  
 Received-Date 02/08/94 Time 10:10 By LJB  
 Sampling Agency: HWM/11  
 Sample Priority:  
 Emergency[N] Legal[Y] Routine[N] Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	U<5.0*	34636	4-BROMOPHENYLPHENYL ETHER	U<2.0	39508	PCB 1260	U<2.3
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 4.47	34641	4-CHLOROPHENYLPHENYL ETHER	U<2.0	81649	PCB 1262	U<2.5
39110	DI-N-BUTYL PHTHALATE	U<2.0	34386	HEXACHLOROCYCLOPENTADIENE	U<5.1			
34596	DI-N-OCTYL PHTHALATE	U<5.1	34391	HEXAChLOROBUTADIENE	U<2.0			
34336	DIETHYL PHTHALATE	U<2.0	39700	HEXAChLOROBENZENE	D<0.33			
34341	DIMETHYL PHTHALATE	U<2.0	34396	HEXAChLOROETHANE	U<2.0			
34428	N-NITROSDIMETHYLAMINE	U<1.7	34551	1,2,4-TRICHLOROBENZENE	U<2.0			
34433	N-NITROSDIPHENYLAMINE	U<2.0	34581	2-CHLORONAPHTHALENE	U<2.0			
34423	N-NITROSO DI-N-PROPYLAMINE	U<2.0	39330	ALDRIN	U<0.041			
34408	ISOPHORONE	U<2.0	39337	ALPHA BHC	D 0.295			
34447	NITROBENZENE	U<2.0	39338	BETA BHC	D 0.539			
34311	2,4-DINITROTOLUENE	U<2.0	34259	DELTA BHC	D<0.041			
34316	2,6-DINITROTOLUENE	U<2.0	39340	GAMMA BHC(LINDANE)	D 0.102			
34205	ACENAPHTHENE	D<2.0	39350	CHLORDANE	U<0.51			
34210	ACENAPHTHYLENE	D 5.37	38310	4,4 DDD	U<0.051			
34220	ANTHRACENE	D 6.41	39320	4,4 DDE	U<0.041			
34526	BENZO(a)ANTHRACENE	D 11.8	39300	4,4 DDT	U<0.031			
34247	BENZO(a)PYRENE	D 13.5	39380	DIELDRIN	U<0.041			
34230	BENZO(b)FLUORANTHENE	D 20.5	34361	ENDOSULFAN I	U<0.061			
34521	BENZO(g,h)PERYLENE	D 11.1	34356	ENDOSULFAN II	U<0.081			
34242	BENZO(k)FLUORANTHENE	D 7.90	34351	ENDOSULFAN SULFATE	U<0.031			
34556	DIBENZO(a,h)ANTHRACENE	D 5.50	39390	ENDRIN	U<0.041			
34376	FLUORANTHENE	D 32.6	34366	ENDRIN ALDEHYDE	U<0.020			
34331	FLUORENE	U<2.0	39410	HEPTACHLOR	U<0.020			
34403	INDENO(1,2,3-cd)PYRENE	D 15.6	39420	HEPTACHLOR EPOXIDE	U<0.061			
34696	NAPHTHALENE	D<2.0	39400	TOXAPHENE	U<3.0			
34461	PHENANTHRENE	D 10.9	39480	METHOXYCHLOR	U<0.29			
34469	PYRENE	D 32.0		PCB 1016/1242	U<3.1			
34520	CHRYSENE	D 15.2	39488	PCB 1221	U<3.5			
34273	BIS(2-CHLOROETHYL)ETHER	U<2.0	39492	PCB 1232	U<3.9			
34278	BIS(2-CHLOROETHOXY)METHANE	U<2.0	39500	PCB 1248	U<2.7			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<2.0	39504	PCB 1254	U<2.6			

\*Reporting Units, unless otherwise noted:  
 water, ug/l; sediment,ug/kg; fish,mg/kg

Unit supervisor  
 Date 3/25/94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments:::U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

\* ALL RESULTS ARE IN MG/KG (PPM).

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source <u>Lander Co.</u>	I.D./Site No <u>33-633</u>
County <u>33</u>	Field No. <u>LC-55-06</u>
Stream Mile _____	Depth <u>1"</u>
Collected: Date <u>2/7/94</u>	Time <u>1:20 PM</u> By <u>CJS</u>
Contact Hazard <u>Unknown</u>	Signature of sampler <u>Chris Hammar</u>
Send Report to <u>Wayne Everett</u> <u>CFO</u>	

Sampling Agency <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input checked="" type="checkbox"/> EEP <input type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____	Sample Type <input checked="" type="checkbox"/> Sediment <input checked="" type="checkbox"/> Soil <input type="checkbox"/> Tissue <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> Sludge <input type="checkbox"/> Other _____	Sample Priority <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient  Date Priority needed: <u>3/14/94</u>
Billing Code (required)  <u>327.38-11</u>		Field Comments:  _____

**ORGANIC ANAL'**  
**Base/Neutral/Acid Extractables**

For lab use only  
 Laboratory Number 99020148  
 Date received 2/8/94  
 Time received 1010 by WSB  
 Date reported \_\_\_\_\_ by \_\_\_\_\_  
 Reviewed by \_\_\_\_\_

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooxy)methane	34283	PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	e-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordane				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dicofol				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SOIL  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SS-06  
Collected-Date 02/07/94 Time 13:20 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0148  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	U<4600	34636	4-BROMOPHENYLPHENYL ETHER	U<1800	39508	PCB 1260	U<1200
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 6170	34641	4-CHLOROPHENYLPHENYL ETHER	U<1800	81649	PCB 1262	U<1200
39110	DI-N-BUTYL PHTHALATE	U<1800	34386	HEXACHLOROCYCLOPENTADIENE	U<4600			
34596	DI-N-OCTYL PHTHALATE	U<4600	34391	HEXACHLOROBUTADIENE	U<1800			
34336	DIETHYL PHTHALATE	U<1800	39700	HEXACHLOROBENZENE	D 330			
34341	DIMETHYL PHTHALATE	U<1800	34396	HEXACHLOROETHANE	U<1800			
34438	N-NITROSDIMETHYLAMINE	U<1500	34551	1,2,4-TRICHLOROBENZENE	U<1800			
34433	N-NITROSO DIPHENYLAMINE	U<1800	34581	2-CHLORONAPHTHALENE	U<1800			
34428	N-NITROSO DI-N-PROPYLAMINE	U<1800	39330	ALDRIN	U<37			
34408	ISOPHORONE	U<1800	39337	ALPHA BHC	D 209			
34447	NITROBENZENE	U<1800	39338	BETA BHC	D 340			
34611	2,4-DINITROTOLUENE	U<1800	34259	DELTA BHC	D 36.8			
( 26	2,6-DINITROTOLUENE	U<1800	39340	GAMMA BHC(LINDANE)	D 53			
34205	ACENAPHTHENE	D<1800	39350	CHLORDANE	U<460			
34200	ACENAPHTHYLENE	D 6050	38310	4,4 DDD	U<92			
34220	ANTHRACENE	D 6320	39320	4,4 DDE	U<37			
34526	BENZO(a)ANTHRACENE	D 15200	39300	4,4 DDT	U<28			
34247	BENZO(a)PYRENE	D 15900	39380	DIELDRIN	U<37			
34230	BENZO(b)FLUORANTHENE	D#10600	34361	ENDOSULFAN I	U<55			
34521	BENZO(ghi)PERYLENE	D 13400	34356	ENDOSULFAN II	U<74			
34242	BENZO(k)FLUORANTHENE	D#	34351	ENDOSULFAN SULFATE	U<28			
34556	DIBENZO(a,h)ANTHRACENE	D 5000	39390	ENDRIN	U<74			
34376	FLUORANTHENE	D 30000	34366	ENDRIN ALDEHYDE	U<37			
34381	FLUORENE	D<1800	39410	HEPTACHLOR	U<18			
34403	INDENO(1,2,3-cd)PYRENE	D 16200	39420	HEPTACHLOR EPOXIDE	U<50			
34696	NAPHTHALENE	D<1800	39400	TOXAPHENE	U<2700			
34461	PHENANTHRENE	D 8300	39480	METHOXYCHLOR	U<140			
34469	PYRENE	D 30100		PCB 1016/1242	U<2900			
34320	CHRYSENE	D 19900	39488	PCB 1221	U<140			
34273	BIS(2-CHLOROETHYL)ETHER	U<1800	39492	PCB 1232	U<2900			
34278	BIS(2-CHLOROETHOXY)METHANE	U<1800	39500	PCB 1248	U<3100			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<1800	39504	PCB 1254	U<3600			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg; fish,ug/kg

Unit supervisor  
Date 3/25/94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U-UNDETECTED, D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

\* BOTH PRESENT-MEASURED AS BENZO(B)FLUORANTHENE.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<u>Lander Co.</u>				
I.D./Site No.	<u>33-633</u>				
County	<u>33</u>	Field No.	<u>LC-SD-01</u>		
Stream Mile		Depth	<u>2"</u>		
Collected: Date	<u>2-7-94</u>	Time	<u>8:30</u>	By	<u>CJS</u>
Contact Hazard	<u>Unknown</u>				
Signature of sampler	<u>Graig Standard</u>				
Send Report to	<u>Wayne Everett, CFO</u>				

Sampling Agency	
— APC	<input type="checkbox"/> DOT
— DWS	<input type="checkbox"/> GW
— SWM	<input type="checkbox"/> UST
— EEP	<input checked="" type="checkbox"/> PASI
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> WPC
other (specify): _____	
Sample Type	
<input checked="" type="checkbox"/> Sediment	
<input type="checkbox"/> Soil	
<input type="checkbox"/> Tissue	
<input type="checkbox"/> Water	
<input type="checkbox"/> Air	
<input type="checkbox"/> Sludge	
Sample Priority	
<input type="checkbox"/> Emergency	
<input checked="" type="checkbox"/> Legal	
<input checked="" type="checkbox"/> Routine	
<input type="checkbox"/> Ambient	
Date Priority needed:	<u>3/14/94</u>
Billing Code (required)	<u>327.38-11</u>
Field Comments:	_____

ORGANIC ANALYSIS  
Base/Neutral/Acid Extractables

For lab use only  
 Laboratory Number 94020141  
 Date received 2/8/94  
 Time received 1010 by LJB  
 Date reported \_\_\_\_\_ by \_\_\_\_\_  
 Reviewed by \_\_\_\_\_

Base/Neutral		Base/Neutral		Base/Neutral		Acid Extractable	
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooethoxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34608	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-niurophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	<input checked="" type="checkbox"/> PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	<input checked="" type="checkbox"/> anthracene	39340	<input checked="" type="checkbox"/> g-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordane				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dieleadrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	<input checked="" type="checkbox"/> pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

## Herbicides

## Other

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SEDIMENT  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SD-01  
Collected-Date 02/07/94 Time 08:30 By CJS  
Date Priority Needed 03/11/94

Laboratory Number 94-02-0141  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N] Legal[Y] Routine[N] Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	UK390	34636	4-BROMOPHENYLPHENYL ETHER	UK390	3950B	PCB 1260	UK550
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 1100	34641	4-CHLOROPHENYLPHENYL ETHER	UK390	81649	PCB 1262	UK600
39110	DI-N-BUTYL PHTHALATE	UK390	34386	HEXA CHLOROCYCLOPENTADIENE	UK1000			
34596	DI-N-OCTYL PHTHALATE	UK390	34391	HEXA CHLOROBUTADIENE	UK390			
34336	DIETHYL PHTHALATE	D 390	39700	HEXA CHLOROBENZENE	D 58.7			
34341	DIMETHYL PHTHALATE	UK390	34396	HEXA CHLOROETHANE	D 390			
34438	N-NITROSONODIMETHYLAMINE	UK1600	34551	1,2,4-TRICHLOROBENZENE	UK390			
34433	N-NITROSODIPHENYLAMINE	UK390	34581	2-CHLORONAPHTHALENE	UK390			
34428	N-NITROSO DI-N-PROPYLAMINE	UK390	39330	ALDRIN	UK9.6			
34408	ISOPHORONE	UK390	39337	ALPHA BHC	UK9.6			
34447	NITROBENZENE	UK390	39338	BETA BHC	UK19			
34611	2,4-DINITROTOLUENE	UK390	34259	DELTA BHC	UK19			
26	2,6-DINITROTOLUENE	UK390	39340	GAMMA BHC(LINDANE)	UK9.6			
34205	ACENAPHTHENE	UK390	39350	CHLORDANE	UK240			
34200	ACENAPHTHYLENE	UK390	38310	4,4 DDD	UK24			
34220	ANTHRACENE	UK390	39320	4,4 DDE	UK19			
34526	BENZO(a)ANTHRACENE	UK390	39300	4,4 DDT	UK14			
34247	BENZO(a)PYRENE	UK390	39380	DI ELDRIN	UK9.6			
34230	BENZO(b)FLUORANTHENE	UK390	34361	ENDOSULFAN I	UK29			
34521	BENZO(g,h)PERYLENE	UK390	34356	ENDOSULFAN II	UK19			
34242	BENZO(k)FLUORANTHENE	UK390	34351	ENDOSULFAN SULFATE	UK14			
34556	DIBENZO(a,h)ANTHRACENE	UK1000	39390	ENDRIN	UK19			
34376	FLUORANTHENE	D 390	34366	ENDRIN ALDEHYDE	UK9.6			
34381	FLUORENE	UK390	39410	HEPTACHLOR	UK9.6			
34403	INDENO(1,2,3-cd)PYRENE	UK390	39420	HEPTACHLOR EPOXIDE	UK14			
34696	NAPHTHALENE	D 390	39400	TOXAPHENE	UK1400			
34461	PHENANTHRENE	D 390	39480	METHOXYPYCHLOR	UK72			
34469	PYRENE	D 390		PCB 1016/1242	UK1500			
34320	CHRYSENE	UK390	39488	PCB 1221	UK1600			
34273	BIS(2-CHLOROETHYL)ETHER	UK390	39492	PCB 1232	UK1900			
34279	BIS(2-CHLOROETHOXY)METHANE	UK390	39500	PCB 1248	UK630			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK390	39504	PCB 1254	UK620			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg; fish, mg/kg

Unit supervisor  
Date 3-25-94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in compliance with current quality  
assurance criteria except as qualified.

Comments::U-UNDETECTED, D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source <u>Lander Co.</u>	Sampling Agency <input checked="" type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input checked="" type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____	Sample Type <input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Soil <input type="checkbox"/> Tissue <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> sludge <input type="checkbox"/> Other _____	Sample Priority <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient  Date Priority needed: <u>3/14/94</u>
I.D./Site No. <u>33-633</u>	Field No. <u>LC-SD-02</u>	Billig Code (required) <u>327.38-11</u>	Field Comments: _____
County <u>33</u>	Stream Mile _____	Depth <u>4"</u>	
Collected: Date <u>2-17-94</u>	Time <u>8:55</u>	By <u>CJS</u>	
Contact Hazard <u>Unknown</u>			
Signature of sampler <u>Ray Harrell</u>			
Send Report to <u>Wayne Everett</u> <u>CFO</u>			

ORGANIC ANALYSIS  
Base/Neutral/Acid Extractables

For lab use only  
 Laboratory Number 94020142  
 Date received 2/8/94  
 Time received 1010 by LJB  
 Date reported \_\_\_\_\_ by \_\_\_\_\_  
 Reviewed by \_\_\_\_\_

Base/Neutral		Base/Neutral		Base/Neutral		Acid Extractable	
34292	butylbenzylphthalate	34273	bis(2-chlorocethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chloroethoxy)methane	34586	PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	p-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dicofol				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

### CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

#### Sample Custody

1. Collected by \_\_\_\_\_  
Delivered to \_\_\_\_\_

*Craig Stanward*

Date 2-7-94 time 8:55AM  
Date 2-7-94 time 4:00 PM

2. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

3. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

4. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

5. Received in Lab by \_\_\_\_\_  
6. Logged in by *Les Corcoran*

Date 2/8/94 time 1010  
Date 2/8/94 time 1010

#### Additional information

7. Nearest town or city Chattanooga

8. Names of others present at time sample collected Don Vantlook, Curt Spaeth

9. Approximate volume of sample 40 oz.

10. Number of other samples collected at same time at this point 0

11. Describe field collection procedure and special handling or preservation of this sample

*As per EPA guidelines and kept at  
4°C.*

12. Describe how sample transported to laboratory *by bus*

13. Sample sealed by *Craig Stanward* Date sample sealed 2-7-94

14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SEDIMENT  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SD-02  
Collected-Date 02/07/94 Time 08:55 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0142  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/I1  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	U<400	34636	4-BROMOPHENYLPHENYL ETHER	U<400	39508	PCB 1260	U<580
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 900	34641	4-CHLOROPHENYLPHENYL ETHER	U<400	81649	PCB 1262	U<620
39110	DI-N-BUTYL PHTHALATE	U<400	34386	HEXACHLOROCYCLOPENTADIENE	U<1000			
34596	DI-N-OCTYL PHTHALATE	U<400	34391	HEXACHLOROBUTADIENE	U<400			
34336	DIETHYL PHTHALATE	D<400	39700	HEXACHLOROBENZENE	U<330			
34341	DIMETHYL PHTHALATE	U<400	34396	HEXACHLOROETHANE	U<400			
34438	N-NITROSODIMETHYLAMINE	U<1600	34551	1,2,4-TRICHLOROBENZENE	U<400			
34433	N-NITROSODIPHENYLAMINE	U<400	34581	2-CHLORONAPHTHALENE	U<400			
34428	N-NITROSO DI-N-PROPYLAMINE	U<400	39330	ALDRIN	U<10			
34408	ISOPHORONE	U<400	39337	ALPHA BHC	U<10			
34447	NITROBENZENE	U<400	39338	BETA BHC	U<20			
34611	2,4-DINITROTOLUENE	U<400	34259	DELTA BHC	U<20			
626	2,6-DINITROTOLUENE	U<400	39340	GAMMA BHC(LINDANE)	U<10			
34205	ACENAPHTHENE	D<400	39350	CHLORDANE	U<252			
34200	ACENAPHTHYLENE	D<400	38310	4,4 DDD	U<25			
34220	ANTHRACENE	D<400	39320	4,4 DDE	U<20			
34526	BENZO(a)ANTHRACENE	D<400	39300	4,4 DDT	U<15			
34247	BENZO(a)PYRENE	D<400	39380	DIELDRIN	U<10			
34230	BENZO(b)FLUORANTHENE	D<400	34361	ENDOSULFAN I	U<30			
34521	BENZO(ghi)PERYLENE	D<400	34356	ENDOSULFAN II	U<20			
34242	BENZO(k)FLUORANTHENE	D<400	34351	ENDOSULFAN SULFATE	U<15			
34556	DIBENZO(a,h)ANTHRACENE	U<1000	39390	ENDRIN	U<20			
34376	FLUORANTHENE	D 598	34366	ENDRIN ALDEHYDE	U<10			
34381	FLUORENE	D<400	39410	HEPTACHLOR	U<10			
34403	INDENO(1,2,3-cd)PYRENE	U<400	39420	HEPTACHLOR EPOXIDE	U<15			
34636	NAPHTHALENE	D<400	39400	TOXAPHENE	U<1500			
34461	PHENANTHRENE	D<400	39480	METHOXYCHLOR	U<76			
34469	PYRENE	D 602		PCB 1016/1242	U<1600			
34320	CHRYSENE	D<400	39488	PCB 1221	U<1700			
34273	BIS(2-CHLOROETHYL)ETHER	U<400	39492	PCB 1232	U<2000			
34278	BIS(2-CHLOROETHOXY)METHANE	U<400	39500	PCB 1248	U<660			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<400	39504	PCB 1254	U<650			

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg;fish,mg/kg

Unit supervisor *John H. Steele*  
Date 3-25-94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<u>Landes Co.</u>				
I.D./Site No.	<u>33-633</u>				
County	<u>33</u>	Field No.	<u>LC-SD-03</u>		
Stream Mile		Depth	<u>1"</u>		
Collected: Date	<u>2-7-94</u>	Time	<u>9:10</u>	By	<u>CJS</u>
Contact Hazard	<u>Unknown</u>				
Signature of sampler	<u>Ray Hamard</u>				
Send Report to	<u>Wayne Everett</u>				
CFO					

Sampling Agency	
— APC	— DOT
— DWS	— GW
— SWM	— UST
— EEP	— PASI
<input checked="" type="checkbox"/> SF	— WPC
— other (specify): _____	
Billing Code (required)	
<u>327.38-11</u>	
Sample Type	
<input checked="" type="checkbox"/> Sediment	Soil
Tissue	Water
Air	Sludge
Other _____	
Sample Priority	
Emergency	
<input checked="" type="checkbox"/> Legal	Routine
Ambient	
Date Priority needed:	<u>3/14/94</u>
Field Comments:	_____

ORGANIC ANALYSIS  
Base/Neutral/Acid Extractables

For lab use only

Laboratory Number 99020143Date received 2/8/94Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

Base/Neutral		Base/Neutral		Base/Neutral		Acid Extractable	
34292	butylbenzylphthalate	34273	bis(2-chlorooethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooxy)methane	34281	PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (indane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dicofol				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

\_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SEDIMENT  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SD-03  
Collected-Date 02/07/94 Time 09:10 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0143  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	U<380	34636	4-BROMOPHENYLPHENYL ETHER	U<380	39508	PCB 1260	U<540
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D<380	34641	4-CHLOROPHENYLPHENYL ETHER	U<380	81649	PCB 1262	U<580
39110	DI-N-BUTYL PHTHALATE	U<380	34386	HEXACHLOROCYCLOPENTADIENE	U<940			
34596	DI-N-OCTYL PHTHALATE	U<380	34391	HEXACHLOROBUTADIENE	U<390			
34336	DIETHYL PHTHALATE	D<380	39700	HEXACHLOROBENZENE	U<330			
34341	DIMETHYL PHTHALATE	U<380	34396	HEXACHLOROETHANE	U<380			
34438	N-NITROSODIMETHYLAMINE	U<1500	34551	1,2,4-TRICHLOROBENZENE	U<380			
34433	N-NITROSODIPHENYLAMINE	U<380	34581	2-CHLORONAPHTHALENE	U<380			
34428	N-NITROSO DI-N-PROPYLAMINE	U<380	39330	ALDRIN	U<9.4			
34408	ISOPHORONE	U<380	39337	ALPHA BHC	U<9.4			
34447	NITROBENZENE	U<380	39338	BETA BHC	U<19			
34611	2,4-DINITROTOLUENE	U<380	34259	DELTA BHC	U<19			
726	2,6-DINITROTOLUENE	U<380	39340	GAMMA BHC(LINDANE)	U<9.4			
34205	ACENAPHTHENE	U<380	39350	CHLORDANE	U<240			
34200	ACENAPHTHYLENE	D<380	38310	4,4 DDD	U<24			
34220	ANTHRACENE	U<380	39320	4,4 DDE	U<19			
34526	BENZO(a)ANTHRACENE	D<380	39300	4,4 DDT	U<14			
34247	BENZO(a)PYRENE	D<380	39380	DIELDRIN	U<9.4			
34230	BENZO(b)FLUORANTHENE	D<380	34361	ENDOSULFAN I	U<28			
34521	BENZO(ghi)PERYLENE	U<380	34356	ENDOSULFAN II	U<19			
34242	BENZO(k)FLUORANTHENE	D<380	34351	ENDOSULFAN SULFATE	U<14			
34556	DIBENZO(a,h)ANTHRACENE	U<940	39390	ENDRIN	U<19			
34375	FLUORANTHENE	D<380	34365	ENDRIN ALDEHYDE	U<9.4			
34381	FLUORENE	U<380	39410	HEPTACHLOR	U<9.4			
34403	INDENO(1,2,3-cd)PYRENE	U<380	39420	HEPTACHLOR EPOXIDE	U<14			
34696	NAPHTHALENE	D<380	39400	TOXAPHENE	U<1400			
34461	PHENANTHRENE	D<380	39480	METHOXYPHORONE	U<71			
34469	PYRENE	D<380	PCB 1016/1242	U<1500				
34320	CHRYSENE	D<380	39488	PCB 1221	U<1600			
34273	BIS(2-CHLOROETHYL)ETHER	U<380	39492	PCB 1232	U<1800			
34278	BIS(2-CHLOROETHOXY)METHANE	U<380	39500	PCB 1248	U<620			
34283	BIS(2-CHLORODISOPROPYL)ETHER	U<380	39504	PCB 1254	U<600			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg; fish,mg/kg

Unit supervisor *Arthur Shae*  
Date 3-25-94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in compliance with current quality  
assurance criteria except as qualified.

Comments::U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

STATE C. TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Landes Co.  
I.D./Site No 33-633  
County 33 Field No. LC-SD-04  
Stream Mile \_\_\_\_\_ Depth \_\_\_\_\_  
Collected: Date 2-7-94 Time 10:15 AM By CJS  
Contact Hazard Unknown  
Signature of sampler Ray G. Murray  
Send Report to Wayne Everett,  
CFO

<b>Sampling Agency</b> <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <hr/> <input type="checkbox"/> other (specify): <hr/>	<b>Sample Type</b> <input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Soil <input type="checkbox"/> Tissue <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> sludge <input type="checkbox"/> Other <hr/>	<b>Sample Priority</b> <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient <hr/> Date/Priority needed: <hr/>
<b>Billing Code (required)</b> <hr/> 327.38-11		<b>Field Comments:</b> _____ <hr/>

**ORGANIC ANAL S**  
**Base/Neutral/Acid Extractables**

For lab use only

Laboratory Number 9402044

Date received 2/8/94

Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

	*	Base/Neutral
34292		butylbenzylphthalate
39100		bis(2-ethylhexyl)phthalate
39110		di-n-butylphthalate
34596		di-n-octylphthalate
34336		diethylphthalate
34341		dimethylphthalate
34438		n-nitrosodimethylamine
34433		n-nitrosodiphenylamine
34428		n-nitroso di-n-propylamine
34408		isophorone
34447		nitrobenzene
34611		2,4-dinitrotoluene
34626		2,6-dinitrotoluene
34205		acenaphthene
34200		acenaphthylene
34220		anthracene
34526		benzo(a)anthracene
34247		benzo(a)pyrene
34230		benzo(b)fluoranthene
34521		benzo(ghi)perylene
34242		benzo(k)fluoranthene
34320		chrysene
34556		dibenzo(a,h)anthracene
34376		fluoranthene
34381		fluorene
34403		indeno(1,2,3-cd)pyrene
34696		naphthalene
34461		phenanthrene
34469		pyrene

	*	Base/Neutral
34273		bis(2-chloroethyl) ether
34278		bis(2-chloroethoxy)methane
34283		bis(2-chloroisopropyl) ether
34636		4-bromophenylphenyl ether
34641		4-chlorophenylphenyl ether
34386		hexachlorocyclopentadiene
34391		hexachlorobutadiene
39700		hexachlorobenzene
34396		hexachloroethane
34551		1,2,4-trichlorobenzene
34581		2-chloronaphthalene
39330		aldrin
39337		a-BHC
39338		b-BHC
34259		d-BHC
39340		g-BHC (lindane)
39350		chlordan
38310		4,4'-DDD
39320		4,4'-DDE
39300		4,4'-DDT
39380		dieleadrin
34361		endosulfan I
34356		endosulfan II
34351		endosulfan sulfate
39390		endrin
34366		endrin aldehyde
39410		heptachlor
39420		heptachlor epoxide
39400		toxaphene

	*	Base/Neutral
39480		methoxychlor
		PCB-1016/1242
39488		PCB-1221
39492		PCB-1232
39500		PCB-1248
39504		PCB-1254
39508		PCB-1260
81649		PCB-1262

*	Acid Extractable
34552	4-chloro-3-methyl phenol
34586	2-chlorophenol
34601	2,4-dichlorophenol
34606	2,4-dimethylphenol
24616	2,4-dinitrophenol
34657	2-methyl-4,6-dinitrophenol
34591	2-nitrophenol
34646	4-nitrophenol
39032	pentachlorophenol
34694	phenol
34681	2,4,6-trichlorophenol

## 1 Herbicides

### | Other

\* please check desired parameter

**Lab Comments:** \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SEDIMENT  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SD-04  
Collected-Date 02/08/94 Time 10:15 By CJS  
Data Priority Needed 03/14/94

Laboratory Number 94-02-0144  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N] Legal[Y] Routine[N] Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	U<23*	34636	4-BROMOPHENYLPHENYL ETHER	U<4.6	39508	PCB 1260	U<6.6
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D<92	34641	4-CHLOROPHENYLPHENYL ETHER	U<4.6	81649	PCB 1262	U<7.1
39110	DI-N-BUTYL PHTHALATE	U<12	34386	HEXACHLOROCYCLOPENTADIENE	U<12			
34596	DI-N-OCTYL PHTHALATE	U<23	34391	HEXACHLOROBUTADIENE	U<4.6			
34336	DIETHYL PHTHALATE	U<4.6	39700	HEXACHLOROBENZENE	U<0.33			
34341	DIMETHYL PHTHALATE	U<4.6	34396	HEXACHLOROETHANE	U<4.6			
34438	N-NITROSONODIMETHYLAMINE	U<1.9	34551	1,2,4-TRICHLOROBENZENE	U<4.6			
34433	N-NITROSODIPHENYLAMINE	U<17	34581	2-CHLORONAPHTHALENE	U<4.6			
34428	N-NITROSO DI-N-PROPYLAMINE	U<4.6	39330	ALDRIN	U<0.12			
34408	ISOPHORONE	U<4.6	39337	ALPHA BHC	D 1.63			
34447	NITROBENZENE	U<4.6	39338	BETA BHC	D 1.58			
24611	2,4-DINITROTOLUENE	U<4.6	34259	DELTA BHC	D 0.241			
26	2,6-DINITROTOLUENE	U<4.6	39340	GAMMA BHC(LINDANE)	D 0.360			
34205	ACENAPHTHENE	D 17.5	39350	CHLORDANE	U<2.9			
34200	ACENAPHTHYLENE	D 38.6	38310	4,4 DDD	U<0.14			
34220	ANTHRACENE	D 71.5	39320	4,4 DDE	U<0.13			
34526	BENZO(a)ANTHRACENE	D 138	39300	4,4 DDT	U<0.14			
34247	BENZO(a)PYRENE	D 128	39380	DIELDRIN	U<0.12			
34230	BENZO(b)FLUORANTHENE	D#406	34361	ENDOSULFAN I	U<0.17			
34521	BENZO(ghi)PERYLENE	D 88.0	34356	ENDOSULFAN II	U<0.23			
34242	BENZO(k)FLUORANTHENE	D#	34351	ENDOSULFAN SULFATE	U<0.086			
34556	DIBENZO(a,h)ANTHRACENE	D 49.3	39390	ENDRIN	U<0.23			
34376	FLUORANTHENE	D 453	34366	ENDRIN ALDEHYDE	U<0.12			
34381	FLUORENE	D 41.6	39410	HEPTACHLOR	U<0.057			
34403	INDENO(1,2,3-cd)PYRENE	D 102	39420	HEPTACHLOR EPOXIDE	U<0.16			
34696	NAPHTHALENE	D 10.9	39400	TOXAPHENE	U<8.3			
34461	PHENANTHRENE	D 92.2	39480	METHOXYPHCLOR	U<0.85			
34469	PYRENE	D 395		PCB 1016/1242	U<9.0			
34320	CHRYSENE	D 165	39488	PCB 1221	U<9.8			
34273	BIS(2-CHLOROETHYL)ETHER	U<4.6	39492	PCB 1232	U<11			
34278	BIS(2-CHLOROETHOXY)METHANE	U<4.6	39500	PCB 1248	U<7.5			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<4.6	39504	PCB 1254	U<7.6			

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg; fish, mg/kg

Unit supervisor  
Date 3/25/94

Completed-Date: 03/23/94 Time: By: MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: :U-UNDETECTED, D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

\* ALL RESULTS IN MG/KG(FPPM). # BOTH PRESENT-MEASURED AS BENZO(B)FLUORANTHENE.

STATE C. TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Landes G.  
I.D./Site No. 33-633  
County 33 Field No. LC-SD-05  
Stream Mile \_\_\_\_\_ Depth 2"  
Collected: Date 2-7-94 Time 2:00 PM By CJS  
Contact Hazard Unknown  
Signature of sampler Wayne Everett,  
Send Report to CFO

<p><b>Sampling Agency</b></p> <p><input type="checkbox"/> APC    <input type="checkbox"/> DOT</p> <p><input type="checkbox"/> DWS    <input type="checkbox"/> GW</p> <p><input type="checkbox"/> SWM    <input type="checkbox"/> UST</p> <p><input checked="" type="checkbox"/> EEP    <input checked="" type="checkbox"/> PASI</p> <p><input checked="" type="checkbox"/> SF    <input type="checkbox"/> WPC</p> <p><input type="checkbox"/> other (specify): _____</p>	<p><b>Sample Type</b></p> <p><input checked="" type="checkbox"/> Sediment</p> <p><input type="checkbox"/> Soil</p> <p><input type="checkbox"/> Tissue</p> <p><input type="checkbox"/> Water</p> <p><input type="checkbox"/> Air</p> <p><input type="checkbox"/> sludge</p> <p><input type="checkbox"/> Other _____</p>	<p><b>Sample Priority</b></p> <p><input type="checkbox"/> Emergency</p> <p><input checked="" type="checkbox"/> Legal</p> <p><input checked="" type="checkbox"/> Routine</p> <p><input type="checkbox"/> Ambient</p>
		<p>Date/Priority needed:</p> <p><u>3/14/94</u></p>
<p><b>Billing Code (required)</b></p> <p><u>327.38-11</u></p>		
<p><b>Field Comments:</b> _____</p>		

**ORGANIC ANAL S**  
**Base/Neutral/Acid Extractables**

For lab use only

Inventory Number 9402043

Date received 2/8/94

Time received 1010 by BS

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by

	*	Base/Neutral
34292		butylbenzylphthalate
39100		bis(2-ethylhexyl)phthalate
39110		di-n-butylphthalate
34596		di-n-octylphthalate
34336		diethylphthalate
34341		dimethylphthalate
34438		n-nitrosodimethylamine
34433		n-nitrosodiphenylamine
34428		n-nitroso di-n-propylamine
34408		isophorone
34447		nitrobenzene
34611		2,4-dinitrotoluene
34626		2,6-dinitrotoluene
34205		acenaphthene
34200		acenaphthylene
34220		anthracene
34526		benzo(a)anthracene
34247		benzo(a)pyrene
34230		benzo(b)fluoranthene
34521		benzo(ghi)perylene
34242		benzo(k)fluoranthene
34320		chrysene
34556		dibenzo(a,h)anthracene
34376		fluoranthene
34381		fluorene
34403		indeno(1,2,3-cd)pyrene
34696		naphthalene
34461		phenanthrene
34469		pyrene

*	Base/Neutral
34273	bis(2-chloroethyl) ether
34278	bis(2-chloroethoxy)methane
34283	bis(2-chloroisopropyl) ether
34636	4-bromophenylphenyl ether
34641	4-chlorophenylphenyl ether
34386	hexachlorocyclopentadiene
34391	hexachlorobutadiene
39700	hexachlorobenzene
34396	hexachloroethane
34551	1,2,4-trichlorobenzene
34581	2-chloronaphthalene
39330	aldrin
39337	a-BHC
39338	b-BHC
34259	d-BHC
39340	g-BHC (lindane)
39350	chlordan
38310	4,4'-DDD
39320	4,4'-DDE
39300	4,4'-DDT
39380	dieleadrin
34361	endosulfan I
34356	endosulfan II
34351	endosulfan sulfate
39390	endrin
34366	endrin aldehyde
39410	heptachlor
39420	heptachlor epoxide
39400	toxaphene

\* please check desired parameter

### Lab Comments:

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SEDIMENT  
 Sample Site Code: 33-633  
 Sample Source: LANDES CO.  
 County: 33  
 Field No: LC-SD-05  
 Collected-Date 02/07/94 Time 14:00 By CJS  
 Date Priority Needed 03/14/94

Laboratory Number 94-02-0145  
 Branch Lab Number  
 Received-Date 02/08/94 Time 10:10 By LJB  
 Sampling Agency: HWM/II  
 Sample Priority:  
 Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	UK37*	34636	4-BROMOPHENYLPHENYL ETHER	UK7.5	39508	PCB 1260	UK11
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 2710	34641	4-CHLOROPHENYLPHENYL ETHER	UK7.5	81649	PCB 1262	UK11
39110	DI-N-BUTYL PHTHALATE	UK75	34386	HEXACHLOROCYCLOPENTADIENE	UK19			
34595	DI-N-OCTYL PHTHALATE	UK75	34391	HEXAChLOROBUTADIENE	UK7.5			
34336	DIETHYL PHTHALATE	UK15	39700	HEXACHLOROBENZENE	UK3.3			
34341	DIMETHYL PHTHALATE	UK7.5	34396	HEXAChLOROETHANE	UK7.5			
34438	N-NITROSODIMETHYLAMINE	UK3.0	34551	1,2,4-TRICHLOROBENZENE	DK7.5			
34433	N-NITROSODIPHENYLAMINE	UK7.5	34581	2-CHLORONAPHTHALENE	UK7.5			
34428	N-NITROSO DI-N-PROPYLAMINE	UK7.5	39330	ALDRIN	UK0.19			
34408	ISOPHORONE	UK7.5	39337	ALPHA BHC	D 4.0			
34447	NITROBENZENE	UK7.5	39338	BETA BHC	D 9.8			
34611	2,4-DINITROTOLUENE	UK7.5	34259	DELTA BHC	D 1.6			
34611	2,6-DINITROTOLUENE	UK7.5	39340	GAMMA BHC(LINDANE)	D 0.237			
34205	ACENAPHTHENE	DK7.5	39350	CHLORDANE	UK4.7			
34200	ACENAPHTHYLENE	D 35.9	38310	4,4 DDD	UK0.47			
34220	ANTHRACENE	D 27.7	39320	4,4 DDE	UK0.37			
34526	BENZO(a)ANTHRACENE	D 113	39300	4,4 DDT	UK0.23			
34247	BENZO(a)PYRENE	D 109	39380	DIELDRIN	UK0.37			
34230	BENZO(b)FLUORANTHENE	D#215	34361	ENDOSULFAN I	UK0.28			
34521	BENZO(ghi)PERYLENE	D 82.4	34356	ENDOSULFAN II	UK0.94			
34242	BENZO(k)FLUORANTHENE	D#	34351	ENDOSULFAN SULFATE	UK0.56			
34556	DI(BENZO(a,b))ANTHRACENE	D 23.4	39390	ENDRIN	UK0.37			
34376	FLUORANTHENE	D 156	34366	ENDRIN ALDEHYDE	UK0.19			
34381	FLUORENE	D 21.7	39410	HEPTACHLOR	UK0.38			
34403	INDENO(1,2,3-cd)PYRENE	D 102	39420	HEPTACHLOR EPOXIDE	UK0.25			
34636	NAPHTHALENE	D 19.7	39400	TOXAPHENE	UK27			
34461	PHENANTHRENE	D 97.6	39480	METHOXYPHENOL	UK1.3			
34469	PYRENE	D 147	PCB 1016/1242		UK15			
34320	CHRYSENE	D 141	39488	PCB 1221	UK16			
34273	BIS(2-CHLOROETHYL)ETHER	UK7.5	39492	PCB 1232	UK18			
34278	BIS(2-CHLOROETHOXY)METHANE	UK7.5	39500	PCB 1248	UK12			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK7.5	39504	PCB 1254	UK12			

\*Reporting Units, unless otherwise noted:  
 water, ug/l; sediment,ug/kg;fish,mg/kg

Unit supervisor  
 Date 3/25/94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
 federally approved procedures where available and in compliance with current quality  
 assurance criteria except as qualified.

Comments::U-UNDETECTED, D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

\*ALL RESULTS IN MG/KG (PPM). #BOTH PRESENT-MEASURED AS BENZO(B)FLUORANTHENE.

**STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES**

Sample Source Landes G.  
I.D./Site No. 33-633  
County 33 Field No. LC-WS-01  
Stream Mile \_\_\_\_\_ Depth 2"  
Collected: Date 2/7/94 Time 10:40 AM By CJS  
Contact Hazard Unknown  
Signature of sampler Wayne Everett  
Send Report to CF

Sampling Agency	Sample Type	Sample Priority
<input type="checkbox"/> APC <input type="checkbox"/> DOT	<input type="checkbox"/> Sediment	<input type="checkbox"/> Emergency
<input type="checkbox"/> DWS <input type="checkbox"/> GW	<input type="checkbox"/> Soil	<input checked="" type="checkbox"/> Legal
<input type="checkbox"/> SWM <input type="checkbox"/> UST	<input type="checkbox"/> Tissue	<input checked="" type="checkbox"/> Routine
<input type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Water	<input type="checkbox"/> Ambient
<input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC	<input type="checkbox"/> Air	
<input type="checkbox"/> other (specify): <hr/>	<input type="checkbox"/> sludge	Date Priority needed:
	<input type="checkbox"/> Other <u>Waste</u>	<u>3/14/94</u>
Billing Code (required)	Field Comments: <hr/> <hr/>	
<b>327.38-11</b>		

**ORGANIC ANALYSIS**  
**Base/Neutral/Acid Extractables**

For lab use only  
Laboratory Number 94020149  
Date received 2/8/94  
Time received 1010 by LJB  
Date reported \_\_\_\_\_ by \_\_\_\_\_  
Reviewed by \_\_\_\_\_

	Base/Neutral
34292	butylbenzylphthalate
39100	bis(2-ethylhexyl)phthalate
39110	di-n-butylphthalate
34596	di-n-octylphthalate
34336	diethylphthalate
34341	dimeethylphthalate*
34438	n-nitrosodimethylamine
34433	n-nitrosodiphenylamine
34428	n-nitroso di-n-propylamine
34408	isophorone
34447	nitrobenzene
34611	2,4-dinitrotoluene
34626	2,6-dinitrotoluene
34205	acenaphthene
34200	acenaphthylene
34220	anthracene
34526	benzo(a)anthracene
34247	benzo(a)pyrene
34230	benzo(b)fluoranthene
34521	benzo(ghi)perylene
34242	benzo(k)fluoranthene
34320	chrysene
34556	dibenzo(a,h)anthracene
34376	fluoranthene
34381	fluorene
34403	indeno(1,2,3-cd)pyrene
34696	naphthalene
34461	phenanthrene
34469	pyrene

	*	Base/Neutral
34273		bis(2-chloroethyl) ether
34278		bis(2-chlorooctoxy)methane
34283		bis(2-chloroisopropyl) ether
34636		4-bromophenylphenyl ether
34641		4-chlorophenylphenyl ether
34386		hexachlorocyclopentadiene
34391		hexachlorobutadiene
39700		hexachlorobenzene
34396		hexachloroethane
34551		1,2,4-trichlorobenzene
34581		2-chloronaphthalene
39330		aldrin
39337		a-BHC
39338		b-BHC
34259		d-BHC
39340		g-BHC (indane)
39350		chlordan
38310		4,4'-DDD
39320		4,4'-DDE
39300		4,4'-DDT
39380		ieldrin
34361		endosulfan I
34356		endosulfan II
34351		endosulfan sulfate
39390		endrin
34366		endrin aldehyde
39410		heptachlor
39420		heptachlor epoxide
39400		toxaphene

	*	Base/Neutral
39480		methoxychlor
		PCB-1016/1242
39488	✓	PCB-1221
39492		PCB-1232
39500		PCB-1248
39504		PCB-1254
39508		PCB-1260
81649	✓	PCB-1262

*	Acid Extractable
34552	4-chloro-3-methyl phenol
34586	2-chlorophenol
34601	2,4-dichlorophenol
34606	2,4-dimethylphenol
24616	2,4-dinitrophenol
34657	2-methyl-4,6-dinitrophenol
34591	2-nitrophenol
34646	4-nitrophenol
39032	pentachlorophenol
34694	phenol
34681	2,4,6-trichlorophenol

## | Herbicides

| Other

\* please check desired parameter

### Lab Comments:

STATE OF TENNESSEE  
 ENVIRONMENTAL LABORATORIES  
 ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: WASTE  
 Sample Site Code: 33-633  
 Sample Source: LANDES CO.  
 County: 33  
 Field No: LC-WS-01  
 Collected-Date 02/07/94 Time 10:40 By CJS  
 Date Priority Needed 03/14/94

Laboratory Number 94-02-0149  
 Branch Lab Number  
 Received-Date 02/08/94 Time 10:10 By LJB  
 Sampling Agency: HWM/11  
 Sample Priority:  
 Emergency[N] Legal[Y] Routine[N] Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	UK9.7*	34636	4-BROMOPHENYLPHENYL ETHER	UK3.9	39508	PCB 1260	UK5.5
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 32.3	34641	4-CHLOROPHENYLPHENYL ETHER	UK3.9	81649	PCB 1262	UK6.0
39110	DI-N-BUTYL PHTHALATE	UK7.8	34386	HEXAChLOROCYCLOPENTADIENE	UK9.7			
34596	DI-N-OCTYL PHTHALATE	UK9.7	34391	HEXAChLOROBUTADIENE	UK3.9			
34336	DIETHYL PHTHALATE	UK3.9	39700	HEXAChLOROBENZENE	D 0.108			
34341	DIMETHYL PHTHALATE	UK3.9	34396	HEXAChLOROETHANE	UK3.9			
34438	N-NITROSODIMETHYLAMINE	UK1.6	34551	1,2,4-TRICHLOROBENZENE	UK3.9			
34433	N-NITROSODIPHENYLAMINE	UK3.9	34581	2-CHLORONAPHTHALENE	UK3.9			
34428	N-NITROSO DI-N-PROPYLAMINE	UK3.9	39330	ALDRIN	UK0.098			
34408	ISOPHORONE	UK3.9	39337	ALPHA BHC	D 1.68			
34447	NITROBENZENE	UK3.9	39338	BETA BHC	D 1.64			
34611	2,4-DINITROTOLUENE	UK9.7	34259	DELTA BHC	D 0.286			
( 26	2,6-DINITROTOLUENE	UK3.9	39340	GAMMA BHC(LINDANE)	D 0.288			
34205	ACENAPHTHENE	UK19	39350	CHLORDANE	UK2.4			
34200	ACENAPHTHYLENE	D 10.6	38310	4,4 DDD	UK0.24			
34220	ANTHRACENE	D 15.8	39320	4,4 DDE	UK0.19			
34526	BENZO(a)ANTHRACENE	D 44.4	39300	4,4 DOT	UK0.072			
34247	BENZO(a)PYRENE	D 41.2	39380	DIEDRIN	UK0.097			
34230	BENZO(b)FLUORANTHENE	D#94.4	34361	ENDOSULFAN I	UK0.15			
34521	BENZO(g,h)PERYLENE	D 26.6	34356	ENDOSULFAN II	UK0.097			
34242	BENZO(k)FLUORANTHENE	D#	34351	ENDOSULFAN SULFATE	UK0.073			
34556	DIBENZO(a,h)ANTHRACENE	D 11.0	39390	ENDRIN	UK0.16			
34376	FLUORANTHENE	D 86.1	34366	ENDRIN ALDEHYDE	UK0.097			
34381	FLUORENE	DK19	39410	HEPTACHLOR	UK0.097			
34403	INDENO(1,2,3-cd)PYRENE	D 30.1	39420	HEPTACHLOR EPOXIDE	UK0.073			
34696	NAPHTHALENE	D 8.38	39400	TOXAPHENE	UK7.0			
34461	PHENANTHRENE	D 25.5	39480	METHOXYPHCLOR	UK0.68			
34469	PYRENE	D 78.5	PCB 1016/1242		UK7.6			
34320	CHRYSENE	D 51.2	39488	PCB 1221	UK8.3			
34273	BIS(2-CHLOROETHYL)ETHER	UK3.9	39492	PCB 1232	UK9.3			
34278	BIS(2-CHLOROETHOXY)METHANE	UK3.9	39500	PCB 1248	UK6.4			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK3.9	39504	PCB 1254	UK6.4			

Reporting Units, unless otherwise noted:  
 water, ug/l; sediment,ug/kg; fish,ug/kg

Unit supervisor  
 Date 3-25-94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
 federally approved procedures where available and in compliance with current quality  
 assurance criteria except as qualified.

Comments: U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

\*ALL RESULTS IN MG/KG(PPM). #BOTH PRESENT-MEASURED AS BENZO(B)FLUORANTHENE.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Lander Co.  
 I.D./Site No 33-633  
 County 33 Field No. LC-WS-02  
 Stream Mile \_\_\_\_\_ Depth 2"  
 Collected: Date 2/7/94 Time 10:50 AM by CJS  
 Contact Hazard Unknown  
 Signature of sampler Craig Hamard  
 Send Report to Wayne Everett,  
CFO

Sampling Agency		Sample Type		Sample Priority	
<input type="checkbox"/> APC	<input type="checkbox"/> DOT	<input type="checkbox"/> Sediment	<input type="checkbox"/> Emergency	<input checked="" type="checkbox"/> Legal	<input type="checkbox"/> Routine
<input type="checkbox"/> DWS	<input type="checkbox"/> GW	<input type="checkbox"/> Soil	<input type="checkbox"/> Water	<input type="checkbox"/> Ambient	<input type="checkbox"/> Other
<input type="checkbox"/> SWM	<input type="checkbox"/> UST	<input type="checkbox"/> Tissue	<input type="checkbox"/> Air	<input type="checkbox"/> sludge	
<input type="checkbox"/> EEP	<input checked="" type="checkbox"/> PASI	<input type="checkbox"/> WPC	<input type="checkbox"/> Waste	Date Priority needed: <u>3/14/94</u>	
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> other (specify):				
Billing Code (required)		Field Comments:			
<u>327.38-11</u>					

ORGANIC ANAL ;  
Base/Neutral/Acid Extractables

For lab use only

Laboratory Number 9A020150Date received 2/8/94Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooethoxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34651	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34403	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dieleadrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: WASTE

Sample Site Code: 33-633

Sample Source: LANDES CO,

County: 33

Field No: LC-WS-02

Collected-Date 02/07/94 Time 10:50 By CJS

Date Priority Needed 03/14/94

Laboratory Number 94-02-0150

Branch Lab Number

Received-Date 02/08/94 Time 10:10 By LJB

Sampling Agency: HWM/II

Sample Priority:

Emergency[N] Legal[Y] Routine[N] Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	U<600	34636	4-BROMOPHENYLPHENYL ETHER	U<600	39508	PCB 1260	U<430
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 871	34641	4-CHLOROPHENYLPHENYL ETHER	U<600	81649	PCB 1262	U<460
39110	DI-N-BUTYL PHTHALATE	U<600	34386	HEXAChLOROCYCLOPENTADIENE	U<1500			
34596	DI-N-OCTYL PHTHALATE	U<600	34391	HEXAChLOROBUTADIENE	U<600			
34336	DIETHYL PHTHALATE	D<600	39700	HEXAChLOROBENZENE	U<330			
34341	DIMETHYL PHTHALATE	U<600	34396	HEXAChLOROETHANE	U<600			
34438	N-NITROSODIMETHYLAMINE	U<1200	34551	1,2,4-TRICHLOROBENZENE	U<600			
34433	N-NITROSODIPHENYLAMINE	U<600	34581	2-CHLORONAPHTHALENE	U<600			
34428	N-NITROSO DI-N-PROPYLAMINE	U<600	39330	ALDRIN	U<15			
34408	ISOPHORONE	U<600	39337	ALPHA BHC	D 33.3			
34447	NITROBENZENE	U<600	39338	BETA BHC	D 25.3			
34611	2,4-DINITROTOLUENE	U<600	34259	DELTA BHC	D 15			
34626	2,6-DINITROTOLUENE	U<600	39340	GAMMA BHC(LINDANE)	D 7.5			
34205	ACENAPHTHENE	U<600	39350	CHLORDANE	U<378			
34200	ACENAPHTHYLENE	D<600	38310	4,4 DDD	U<19			
34220	ANTHRACENE	D<600	39320	4,4 DDE	U<15			
34526	BENZO(a)ANTHRACENE	D 691	39300	4,4 DDT	U<20			
34247	BENZO(a)PYRENE	D 729	39380	DIELDRIN	U<15			
34230	BENZO(b)FLUORANTHENE	D 1100	34361	ENDOSULFAN I	U<23			
34521	BENZO(g,h,i)PERYLENE	D 669	34356	ENDOSULFAN II	U<30			
34242	BENZO(k)FLUORANTHENE	D<600	34351	ENDOSULFAN SULFATE	U<11			
34556	DIBENZO(a,h)ANTHRACENE	U<1500	39390	ENDRIN	U<30			
34376	FLUORANTHENE	D 1070	34366	ENDRIN ALDEHYDE	U<15			
34381	FLUORENE	D<600	39410	HEPTACHLOR	U<7.5			
34403	INDENO(1,2,3-cd)PYRENE	D 751	39420	HEPTACHLOR EPOXIDE	U<11			
34696	NAPHTHALENE	D<600	39400	TOXAPHENE	U<1100			
34451	PHENANTHRENE	D<600	39480	METHOXYCHLOR	U<110			
34469	PYRENE	D 1080	PCB 1016/1242		U<1170			
34320	CHRYSENE	D 806	39488	PCB 1221	U<1300			
34273	BIS(2-CHLOROETHYL)ETHER	U<600	39492	PCB 1232	U<1500			
34278	BIS(2-CHLOROETHOXY)METHANE	U<600	39500	PCB 1248	U<990			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<600	39504	PCB 1254	U<480			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg; fish, ag/kg

Unit supervisor  
Date 3/25/94

Completed-Data:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in compliance with current quality  
assurance criteria except as qualified.

Comments: U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

**STATE C TENNESSEE - ENVIRONMENTAL LABORATORIES**

Sample Source Lander Co.  
I.D./Site No. 33-633  
County 33 Field No. LC-WS-03  
Stream Mile \_\_\_\_\_ Depth 2"  
Collected: Date 2-7-94 Time 11.05 By CJS  
Contact Hazard Unknown  
Signature of sampler Wayne Shannon  
Send Report to Wayne Everett,  
CFO

<b>Sampling Agency</b>	<b>Sample Type</b>	<b>Sample Priority</b>
<input type="checkbox"/> APC <input type="checkbox"/> DOT	<input type="checkbox"/> Sediment	<input type="checkbox"/> Emergency
<input type="checkbox"/> DWS <input type="checkbox"/> GW	<input type="checkbox"/> Soil	<input checked="" type="checkbox"/> Legal
<input type="checkbox"/> SWM <input type="checkbox"/> UST	<input type="checkbox"/> Tissue	<input checked="" type="checkbox"/> Routine
<input type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Water	<input type="checkbox"/> Ambient
<input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC	<input type="checkbox"/> Air	
<input type="checkbox"/> other (specify): <hr/>	<input type="checkbox"/> sludge	Date Priority needed:
	<input type="checkbox"/> Other <i>Waste</i>	<hr/> <u>3/14/94</u>
<b>Billing Code (required)</b>	<b>Field Comments:</b>	
<b>327.38-11</b>		

ORGANIC ANAL	3
Base/Neutral/Acid Extractables	

	*	Base/Neutral
34292		butylbenzylphthalate
39100		bis(2-ethylhexyl)phthalate
39110		di-n-butylphthalate
34596		di-n-octylphthalate
34336		diethylphthalate
34341	✓	dimethylphthalate
34438		n-nitrosodimethylamine
34433		n-nitrosodiphenylamine
34428		n-nitroso di-n-propylamine
34408		isophorone
34447		nitrobenzene
34611		2,4-dinitrotoluene
34626		2,6-dinitrotoluene
34205		acnaphthene
34200		acnaphthylene
34220		anthracene
34526		benzo(a)anthracene
34247	✓	benzo(a)pyrene
34230		benzo(b)fluoranthene
34521		benzo(ghi)perylene
34242		benzo(k)fluoranthene
34320		chrysene
34556		dibenzo(a,h)anthracene
34376		fluoranthene
34381		fluorene
34403		indeno(1,2,3-cd)pyrene
34696		naphthalene
34461		phenanthrene
34469	✓	pyrene

		Base/Neutral
34273		bis(2-chloroethyl) ether
34278		bis(2-chloroethoxy)methane
34283		bis(2-chloroisopropyl) ether
34636	V	4-bromophenylphenyl ether
34641		4-chlorophenylphenyl ether
34386		hexachlorocyclopentadiene
34391		hexachlorobutadiene
39700		hexachlorobenzene
34356		hexachloroethane
34551		1,2,4-trichlorobenzene
34581		2-chloronaphthalene
39330		aldrin
39337		a-BHC
39338	V	b-BHC
34259		d-BHC
39340		g-BHC (lindane)
39350		chlordan
38310		4,4'-DDD
39320		4,4'-DDE
39300		4,4'-DDT
39380		dieldrin
34361		endosulfan I
34356		endosulfan II
34351		endosulfan sulfate
39390		endrin
34366		endrin aldehyde
39410		heptachlor
39420		heptachlor epoxide
39400	V	toxaphene

	*	Base/Neutral
39480		methoxychlor
		PCB-1016/1242
39488		PCB-1221
39492	✓	PCB-1232
39500		PCB-1248
39504		PCB-1254
39508		PCB-1260
81649	✓	PCB-1262

	*	Acid Extractable
34552		4-chloro-3-methyl phenol
34586		2-chlorophenol
34601		2,4-dichlorophenol
34603		2,4-dimethylphenol
24616	✓	2,4-dinitrophenol
34657		2-methyl-4,6-dinitrophenol
34591		2-nitrophenol
34646		4-nitrophenol
39032		pentachlorophenol
34694		phenol
34681	✓	2,4,6-trichlorophenol

## | Herbicides

### | Other

\* please check desired parameter

#### Lab Comments:

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: WASTE  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-WS-03  
Collected-Date 02/07/94 Time 11:05 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0151  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJS  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	UK<330	34636	4-BROMOPHENYLPHENYL ETHER	UK<330	39508	PCB 1260	UK470
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 2910	34641	4-CHLOROPHENYLPHENYL ETHER	UK<330	81649	PCB 1262	UK500
39110	DI-N-BUTYL PHTHALATE	UK<330	34386	HEXACHLOROCYCLOPENTADIENE	UK820			
34596	DI-N-OCTYL PHTHALATE	UK<810	34391	HEXACHLOROBUTADIENE	UK<330			
34336	DIETHYL PHTHALATE	DK330	39700	HEXACHLOROBENZENE	UK<330			
34341	DIMETHYL PHTHALATE	UK<330	34396	HEXACHLOROETHANE	UK<330			
34438	N-NITROSDIMETHYLAMINE	UK<1300	34551	1,2,4-TRICHLOROBENZENE	UK<330			
34433	N-NITROSDIPHENYLAMINE	UK<330	34581	2-CHLORONAPHTHALENE	UK<330			
34428	N-NITROSO DI-N-PROPYLAMINE	UK<330	39330	ALDRIN	UK8.1			
34408	ISOPHORONE	UK<330	39337	ALPHA BHC	UK8.1			
34447	NITROBENZENE	UK<330	39338	BETA BHC	UK16			
34611	2,4-DINITROTOLUENE	UK<330	34259	DELTA BHC	UK16			
326	2,6-DINITROTOLUENE	UK<330	39340	GAMMA BHC(LINDANE)	UK8.1			
34205	ACENAPHTHENE	UK<330	39350	CHLORDANE	UK407			
34200	ACENAPHTHYLENE	DK330	38310	4,4 DDD	UK41			
34220	ANTHRACENE	UK<330	39320	4,4 DDE	UK16			
34525	BENZO(a)ANTHRACENE	UK<330	39300	4,4 DDT	UK22			
34247	BENZO(a)PYRENE	UK<330	39380	DIELDRIN	UK16			
34230	BENZO(b)FLUORANTHENE	UK<330	34361	ENDOSULFAN I	UK24			
34521	BENZO(ghi)PERYLENE	UK<330	34356	ENDOSULFAN II	UK33			
34242	BENZO(k)FLUORANTHENE	UK<330	34351	ENDOSULFAN SULFATE	UK12			
34556	DIBENZO(a,h)ANTHRACENE	UK<330	39390	ENDRIN	UK32			
34376	FLUORANTHENE	UK<330	34366	ENDRIN ALDEHYDE	UK16			
34381	FLUORENE	UK<330	39410	HEPTACHLOR	UK8.1			
34403	INDENO(1,2,3-cd)PYRENE	UK<330	39420	HEPTACHLOR EPOXIDE	UK12			
34696	NAPHTHALENE	DK330	39400	TOXAPHENE	UK1200			
34461	PHENANTHRENE	DK330	39480	METHOXYPHENOL	UK57			
34469	PYRENE	UK<330	39488	PCB 1016/1242	UK1300			
34320	CHRYSENE	UK<330	39492	PCB 1221	UK1400			
34273	BIS(2-CHLOROETHYL)ETHER	UK<330	39500	PCB 1232	UK1600			
34278	BIS(2-CHLOROETHOXY)METHANE	UK<330	39504	PCB 1248	UK530			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK<330						

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg; fish,mg/kg

Unit supervisor Cathy M. Stock  
Date 3-25-94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source 3 Landes Cr.  
I.D./Site No. 33-633  
County 33 Field No. LC-W5-0  
Stream Mile \_\_\_\_\_ Depth 1"  
Collected: Date 2-7-94 Time 11:25 By CJS  
Contact Hazard Unknown  
Signature of sampler Dale Sharp  
Send Report to Wayne Everett,  
CFO

<p><b>Sampling Agency</b></p> <p> <input type="checkbox"/> APC    <input type="checkbox"/> DOT  <input type="checkbox"/> DWS    <input type="checkbox"/> GW  <input type="checkbox"/> SWM    <input type="checkbox"/> UST  <input type="checkbox"/> EEP    <input checked="" type="checkbox"/> PASI  <input checked="" type="checkbox"/> SF    <input type="checkbox"/> WPC  <input type="checkbox"/> other (specify):  <hr/> </p>	<p><b>Sample Type</b></p> <p> <input type="checkbox"/> Sediment  <input type="checkbox"/> Soil  <input type="checkbox"/> Tissue  <input type="checkbox"/> Water  <input type="checkbox"/> Air  <input type="checkbox"/> Sludge  <input type="checkbox"/> Other <u>Waste</u> </p>	<p><b>Sample Priority</b></p> <p> <input type="checkbox"/> Emergency  <input checked="" type="checkbox"/> Legal  <input checked="" type="checkbox"/> Routine  <input type="checkbox"/> Ambient       </p> <p>Date, Priority needed:  <u>3/14/94</u> </p>
<p><b>Billing Code (required)</b></p> <p><u>327.38-11</u></p>		
<p><b>Field Comments:</b></p> <hr/>		

**ORGANIC ANALYSIS**  
**Base/Neutral/Acid Extractables**

For lab use only

Inventory Number 94020152

Date received 2/8/94

Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

	*	Base/Neutral
34292		butylbenzylphthalate
39100		bis(2-ethylhexyl)phthalate
39110		di-n-butylphthalate
34596		di-n-octylphthalate
34336		diethylphthalate
34341	✓	dimethylphthalate
34438		n-nitrosodimethylamine
34433		n-nitrosodiphenylamine
34428		n-nitroso di-n-propylamine
34408		isophorone
34447		nitrobenzene
34611		2,4-dinitrotoluene
34626		2,6-dinitrotoluene
34205		acenaphthene
34200		acenaphthylene
34220	✓	anthracene
34526		benzo(a)anthracene
34247		benzo(a)pyrene
34230		benzo(b)fluoranthene
34521		benzo(ghi)perylene
34242		benzo(k)fluoranthene
34320		chrysene
34556		dibenzo(a,h)anthracene
34376		fluoranthene
34381		fluorene
34403		indeno(1,2,3-cd)pyrene
34696		naphthalene
34461		phenanthrene
34469	✓	pyrene

	*	Base/Neutral
34273		bis(2-chloroethyl) ether
34278		bis(2-chlorooxy)methane
34283		bis(2-chloroisopropyl) ether
34636		4-bromophenylphenyl ether
34641	✓	4-chlorophenylphenyl ether
34386		hexachlorocyclopentadiene
34391		hexachlorobutadiene
39700		hexachlorobenzene
34396		hexachloroethane
34551		1,2,4-trichlorobenzene
34581		2-chloronaphthalene
39330		aldrin
39337		a-BHC
39338		b-BHC
34259		d-BHC
39340		g-BHC (lindane)
39350	✓	chlordan
38310		4,4'-DDD
39320		4,4'-DDE
39300		4,4'-DDT
39380		dieldrin
34361		endosulfan I
34356		endosulfan II
34351		endosulfan sulfate
39390		endrin
34366		endrin aldehyde
39410		heptachlor
39420		heptachlor epoxide
39400	✓	toxaphene

\* please check desired parameter

### Lab Comments:

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: WASTE  
 Sample Site Code: 33-633  
 Sample Source: LANDES CO.  
 County: 33  
 Field No: LC-WS-04  
 Collected-Date 02/07/94 Time 11:25 By CJS  
 Date Priority Needed 03/14/94

Laboratory Number 94-02-0152  
 Branch Lab Number  
 Received-Date 02/08/94 Time 10:10 By LJB  
 Sampling Agency: HWM/11  
 Sample Priority:  
 Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	UK340	34636	4-BROMOPHENYLPHENYL ETHER	UK340	39508	PCB 1260	UK480
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 629	34641	4-CHLOROPHENYLPHENYL ETHER	UK340	81649	PCB 1262	UK520
39110	DI-N-BUTYL PHTHALATE	D<340	34386	HEXAChLOROCYCLOPENTADIENE	UK840			
34596	DI-N-OCTYL PHTHALATE	UK340	34391	HEXAChLOROBUTADIENE	UK340			
34336	DIETHYL PHTHALATE	D<340	39700	HEXAChLOROBENZENE	UK330			
34341	DIMETHYL PHTHALATE	UK340	34396	HEXAChLOROETHANE	UK340			
34438	N-NITROSDIMETHYLAMINE	UK1400	34551	1,2,4-TRICHLOROBENZENE	UK340			
34433	N-NITROSDIPHENYLAMINE	UK340	34581	2-CHLORONAPHTHALENE	UK340			
34428	N-NITROSO DI-N-PROPYLAMINE	UK340	39330	ALDRIN	UK8.4			
34408	ISOPHORONE	UK340	39337	ALPHA BHC	D<8.4			
34447	NITROBENZENE	UK340	39338	BETA BHC	UK17			
34611	2,4-DINITROTOLUENE	UK340	34259	DELTA BHC	UK17			
( 26	2,6-DINITROTOLUENE	UK340	39340	GAMMA BHC(LINDANE)	UK8.4			
34205	ACENAPHTHENE	D<340	39350	CHLORDANE	UK210			
34200	ACENAPHTHYLENE	D<340	38310	4,4 DDD	UK21			
34220	ANTHRACENE	D<340	39320	4,4 DDE	UK17			
34526	BENZO(a)ANTHRACENE	D 604	39300	4,4 DDT	UK13			
34247	BENZO(a)PYRENE	D 657	39380	DIELDRIN	UK8.4			
34230	BENZO(b)FLUORANTHENE	D#1280	34361	ENDOSULFAN I	UK25			
34521	BENZO(ghi)PERYLENE	D 501	34356	ENDOSULFAN II	UK34			
34242	BENZO(k)FLUORANTHENE	D#	34351	ENDOSULFAN SULFATE	UK13			
34556	DIBENZO(a,h)ANTHRACENE	UK840	39390	ENDRIN	UK17			
34376	FLUORANTHENE	D 826	34366	ENDRIN ALDEHYDE	UK8.4			
34381	FLUORENE	D<340	39410	HEPTACHLOR	UK3.4			
34403	INDENO(1,2,3-cd)PYRENE	D 595	39420	HEPTACHLOR EPOXIDE	UK13			
34696	NAPHTHALENE	D<340	39400	TOXAPHENE	UK1200			
34461	PHENANTHRENE	D 404	39480	METHOXYPHCLOR	UK60			
34469	PYRENE	D 777		PCB 1016/1242	UK1300			
34320	CHRYSENE	UK711	39488	PCB 1221	UK1400			
34273	BIS(2-CHLOROETHYL)ETHER	UK340	39492	PCB 1232	UK1600			
34278	BIS(2-CHLOROETHOXY)METHANE	UK340	39500	PCB 1248	UK550			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK340	39504	PCB 1254	UK540			

Reporting Units, unless otherwise noted:  
 water, ug/l; sediment,ug/kg; fish,mg/kg

Unit supervisor Cathy Shuck  
 Date 2-25-94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
 federally approved procedures where available and in compliance with current quality  
 assurance criteria except as qualified.

Comments: U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

\*BOTH PRESENT=MEASURED AS BENZO(B)FLUORANTHENE.

Site No. TND 003328960  
Appendix C

4-Mile Site Radius Map

Site No. TND 003328960  
Ref. No. 7

U. S. DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

PROPERTIES AND HAZARDS OF

108 SELECTED SUBSTANCES

Jeffrey E. Lucius, Gary R. Olhoeft,  
Patricia L. Hill, and Steven K. Duke

U.S. Geological Survey

Open-File Report 89-491

August 1989

This report is preliminary and has not been reviewed for conformity with  
U.S. Geological Survey editorial standards. Any use of trade names is for  
descriptive purposes only and does not imply endorsement by the U.S.  
Geological Survey.

Site No. TND 003328960  
Ref. No. 8



STATE OF TENNESSEE  
DEPARTMENT OF PUBLIC HEALTH  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406

March 19, 1985

Mr. John Gourley  
Concrete Forms Corporation  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: Inspection Under the Tennessee  
Hazardous Waste Management Act  
TND-00-332-8960

Dear Mr. Gourley:

This letter confirms the observations and/or recommendations which were made during the Hazardous Waste Inspection concerning our facility on March 11, 1985.

No violations of the regulations promulgated under the authority of the Tennessee Hazardous Waste Management Act were noted. A copy of the Hazardous Waste Inspection Report is attached for your information and review.

If you desire any assistance or need clarification, please feel free to contact me at (615) 624-9921.

Sincerely,

*Burl H. Maupin*

Burl H. Maupin  
Environmental Engineer  
Division of Solid Waste Management

BHM:pph  
Enclosure

cc: Division of Solid Waste Management, Nashville

INSPECTION REPORT

1. Site Operation Inspected:

Concrete Forms Corporation  
TND-30-332-8960  
314 Hocket Road  
Chattanooga, TN 37410  
Hamilton County

2. Primary Contact:

Mr. John Sourley  
314 Hocket Road  
Chattanooga, TN 37410

3. Date and Time of Inspection:

March 11, 1985  
8:00 - 9:00 a.m.

4. Report Prepared By:

Jeri H. Maupin, Environmental Engineer  
Tennessee Department of Health and Environment  
Division of Solid Waste Management (DSWM)  
2501 Milne Street  
Chattanooga, Tennessee 37406  
(615) 624-9921

5. Names and Affiliations of Other Inspection Participants:

Mr. Mickey Schrudder

6. Purpose of Inspection:

To evaluate the Moccasin Printing Company's compliance with applicable generator requirements of the Rules Governing Hazardous Waste Management in Tennessee.

7. Facility Description:

Nature of business:

Scaffolding (SIC 3446)  
Concrete Forms (SIC 3272)

INSPECTION REPORT  
Concrete Forms Corporation

Hazardous waste generated:

Paint Sludge (D001)

Inspection status:

Small quantity generator.

III. Inspection Findings:

No violations were observed.

Signed Paul W. Mayes

Date March 19, 1985

cc: Division of Solid Waste Management, Nashville

Site No. TND 003328960  
Ref. No. 9

TENNESSEE DEPARTMENT OF HEALTH & ENVIRONMENT  
DIVISION OF WATER POLLUTION CONTROL  
CHATTANOOGA FIELD OFFICE  
PUBLIC INPUT FORM

Input No.: 90-261

Type of Input:  
Fish Kill        Spill         
Complaint ✓ R/A        Other       

Date Rec'd.: 5-31-90

Time: 1:45

Refer to Input No. \_\_\_\_\_

Rec'd. By: TDM

Received  
From: Anonymous

Person to  
Contact: \_\_\_\_\_

Company: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Telephone: \_\_\_\_\_

Location of Problem/Address: Landes Company - 314 Hooker Rd.

Stream: \_\_\_\_\_

County: Hamilton

Nature of problem, request, or notification: The caller reported that the Landes Company operates a "shop blast" facility in which large lead balls covered with foundry sand cover the entire area. He said rainfall runoff reaches Chattanooga Creek and also soaks into the ground. The caller also said that the company periodically dumps paint, thinners, and concrete cleaners

Action Committed To:

(Continued, see page(s) 2 Attached)

N/A        Investigate        Refer        When? \_\_\_\_\_

Referred To: \_\_\_\_\_

Signature: TDM Date: 5-31-90

Follow-Up Assigned To: \_\_\_\_\_

Assigned By: \_\_\_\_\_ Date: \_\_\_\_\_

Follow-Up Complete: \_\_\_\_\_

Date: \_\_\_\_\_

cc: \_\_\_\_\_

cc: \_\_\_\_\_

bjd/3601CC20

onto the grounds of their property. The caller said that he was associated with the plant and has first hand knowledge of these violations. He asked that soil samples be taken of the strip blast facility. He also said the creek was already posted in this area but that he was concerned about fish being contaminated with lead.

The caller said he had reported these problems to the owners, but they took an "I don't care" attitude. The owners are reportedly out of Texas and not concerned with this area from an environmental standpoint.

The caller was told that this information would be passed on to the proper personnel.

(continued, see page(s) \_\_\_\_\_, attached)

Signature: Leena Myers Date: 5-31-90

Site No. TND 003328960  
Ref. No. 10

CERTIFIED MAIL #503 PG 4-11  
RETURN RECEIPT REQUESTED



STATE OF TENNESSEE  
DEPARTMENT OF HEALTH AND ENVIRONMENT  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406-3399

August 31, 1990

Mr. Russell W. Landes  
Landes Company, Inc.  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: Followup Inspection under the  
Tennessee Hazardous Waste  
Management Act relative to  
the June 18, 1990 N.O.V.  
NNF-33-105-0123

Dear Mr. Landes:

This letter confirms the observations and/or recommendations which were made during the hazardous waste follow-up inspection concerning your facility on August 29, 1990. (See attached Inspection Report.)

Observations and documents reviewed during our followup inspection revealed violations outlined within the June 18, 1990 N.O.V. corrected.

In regards to the area across the railroad tracks referred to as the sandblasting area, this will be addressed in future correspondence.

If you desire assistance or need clarification regarding this transmittal, please feel free to contact me at 615/624-9921.

Cordially,

A handwritten signature in black ink, appearing to read "Guy M. Moose".

Guy M. Moose  
Regional Director/Env. Specialist  
Division of Solid Waste Management

GMM/ph

cc: DSWM, Nashville, Bob Vaughan  
cc: Hal Shook, Landes Company

INSPECTION REPORT

1. Site/Operation Inspected:

Landes Company, Inc.  
NNF-33-105-0123  
314 Hooker Road  
Chattanooga, Tennessee 37410  
Hamilton County

2. Primary Contact:

Mr. Russell W. Landes, President  
314 Hooker Road  
Chattanooga, Tennessee 37410  
(615) 321-6013

3. Date and Time of Inspection:

August 30, 1990  
10:00 AM - 11:00 AM

4. Report Prepared By:

Guy M. Moose, Regional Director  
Tennessee Department of Health and Environment  
Division of Solid Waste Management  
2101 Milne Street  
Chattanooga, Tennessee 37406  
(615) 624-9921

5. Names and Affiliations of Other Inspection Participants:

Hal Shook, Landes Company

6. Purpose of Inspection:

To evaluate Landes Company, Inc.'s compliance with the applicable generator requirements of the Rules Governing Hazardous Waste Management In Tennessee.

7. Facility Description:

Nature of Business:

Metal Construction Projects-Job Shop  
Produces metal forming systems, welding metal fabricators,  
machines and painting.

Types and Amounts of Hazardous Waste Generated:

Petroleum Naphtha  
Less than 100 kg/month

Landes Company Inspection Report

August 31, 1990

Page 2

Facility Status:

Conditionally Exempt Small Quantity Generator

8. Inspection Findings:

As a result of the inspection 1,490 lbs of hazardous waste was stored on site.

Signed: G. M. Moon  
Dated: 08-31-1990

Site No. TND 003328960  
Ref. No. 11

CERTIFIED MAIL #795 926 686  
RETURN RECEIPT REQUESTED



STATE OF TENNESSEE  
DEPARTMENT OF HEALTH AND ENVIRONMENT  
SOUTHEAST REGIONAL OFFICE

January 14, 1991

2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406-3399

Mr. Russell Landes, President  
Landes Company, Inc.  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: NOTICE OF VIOLATION Under the  
Tennessee Hazardous Waste  
Management Act (TCA 68-46, Part 1,  
Sections 101 - 119)  
Landes Company, Inc.  
NNF-33-105-0123

Dear Mr. Landes:

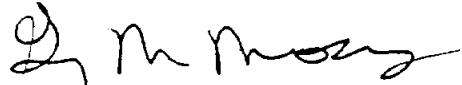
In response to a complaint received by the Division of Solid Waste Management, a site visit ensued on June 14, 1990. Observations during our investigation revealed an illegal waste disposal site/waste pile (foundry sand/baghouse dust) within the vicinity of the Landes Company's sand blasting rig. Therefore, the Division of Solid Waste Management collected samples on November 15, 1990; to determine if the waste observed was hazardous (samples split with Landes Company, Inc.). Analytical results received from the DSWM laboratory revealed the foundry sand/baghouse dust disposed of on the facility's premises to meet the definition of a D008 hazardous waste. Therefore, the DSWM must allege that the facility violated Rule 1200-1-11-.07(1)(b)1 of Tennessee's hazardous waste regulations by illegally operating a hazardous waste disposal facility.

Landes Company, Inc. must initiate efforts to bring the facility in compliance by closing the disposal area in accordance with Rule 1200-1-11-.05 of the aforementioned regulations. To accomplish this Landes Company, Inc. must:

1. Immediately cease disposal of all hazardous waste on-site.
2. Immediately contain hazardous waste piles as to eliminate migration of such.
3. Immediately submit hazardous waste notification with regard to the above waste as per Rule 1200-1-11-.03(2)(b)
4. On or before February 28, 1991, Landes Company, Inc. must submit a Closure/Post Closure plan to the Commissioner of Health and Environment. This plan must address all applicable requirements of Rule 1200-1-11-.05(7) and (14)e. Additionally, Landes Company, Inc. must submit documents to demonstrate compliance with the financial requirements of Rule 1200-1-11-.05(8).

If you desire any assistance or need clarification regarding this correspondence, please feel free to contact me at (615) 624-9921.

Cordially,



Guy M. Moose  
Regional Director  
Division of Solid Waste Management

GMM/31010014

cc: DSWM, Nashville File #33-366  
cc: DSWM, Nashville, Bob Vaughan, Enforcement Section  
cc: Javier Garcia, USEPA, Region IV, Atlanta, GA

Site No. TND 003328960  
Ref. No. 12

you want the  
RECIPIENT  
TO SEE ONLY  
is requested



STATE OF TENNESSEE  
DEPARTMENT OF PUBLIC HEALTH  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406

December 17, 1982

CAR004 TPLW 1/6  
JDH 1/M  
SLA S73  
JFP 2/1  
Mailed Address Response To: AZF 1/13  
Division of Water Quality Control  
Chattanooga Basin Office  
2501 Milne Street  
Chattanooga, TN 37406  
CERTIFIED MAIL

RC

12/18

1/1/1

LP 1/12

1/13

File

Concrete  
Forms Corp.  
STP 1982  
(Hampton)

Set up file  
(Yellow - THB) →

Mr. Daniel Horsman, President  
Concrete Forms Corporation  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: Notice of Violation  
1977 Tennessee Water Quality Control Act

Dear Mr. Horsman:

This letter conveys the results of my inspection at your plant on November 16, 1982. While there, I met with Mr. Dan Horsman, Mr. Jim Moore, and Mr. Mickey Schrudder. I also took bacteriological samples of surface water at various locations at your plant as shown on the enclosed map. The locations were the same as those sampled during our June 3, 1981 inspection, and a comparison of the results for fecal coliform bacteria are as follows:

SAMPLE POINT NUMBER	STRUCTURE SAMPLED	FECAL COLIFORM COLONIES PER 100 ML OF SAMPLE	
		1981 Results	1982 Results
1	Storm sewer outlet	2,700	30,000*
2	Storm sewer catch basin	41,000	420
3	Storm sewer catch basin	7,600	188
4	Sink drain catch basin	65	12
5	Open pit	Not Sampled	100*
6	Off-site drainage ditch	Not Sampled	27*

\*Standing water, no flow.

The 1981 inspection revealed that at least one direct discharge of domestic sewage was entering the storm sewer at the catch basin at point No. 2. Also, the levels of fecal coliform bacteria at points 1 and 3 indicated the existence of contamination to the surface water drainage ditches through your plant property from septic tank/field line systems adjacent or under the Assembly and Pan Buildings. The contamination was a violation of the referenced State Law and your company was asked to correct the problems as discussed in our letter of July 23, 1981, to Mr. Dan Horsman (copy enclosed). Mr. Horsman's reply to this office (in his August 31, 1981 letter) was that the restroom discharges would be connected to the Chattanooga Sanitary Sewer System by October 31, 1981.

Miel Horsman, President

ember 17, 1982

age Two

Unfortunately, the discharges were not connected to the City's systems I learned during my recent inspection at your facility. Although the one discharge monitored at point 2 was connected to a new septic tank, domestic sewage was observed still entering the catch basin at that location. Further, the samples and observations revealed that contamination remains high at point 1. The results at point 3 are inconclusive since the sample was taken from standing water and may not have been able to show effects from field line leachate under such conditions. However, the sample taken from flowing water in the 1981 investigation clearly indicated the presence of sewage at point 3.

Mr. Horsman and Mr. Moore told me that the reason the discharges were not connected to the City's sanitary sewer was that the 21 inch line along Hooker Road was under "private ownership" and not available to your company. However, apparently no effort was made to contact the owner and to gain permission for its use. I reminded you that → the City owns a major interceptor along Wilson Road on your company's eastern property line and connection to that line should only be a matter of securing a permit from the city.

It is still the Division of Water Quality Control's position that the contamination from the sources to the State's waters and the resulting violation of the Water Quality Control Act must be stopped. Further, the discharge of the cooling water from the spot welder without a Permit from this Division is also a violation of the Act. We still believe that the best solution to these problems is for your company to connect all its restroom discharges to the Chattanooga Sanitary Sewer System. The cooling water discharge will also be required to obtain a Permit if it is not eliminated.

Please advise this office within thirty (30) days of your company's intentions and schedule for correcting the violations discussed in this letter. If you desire a Permit for the cooling water discharge, we will send you the necessary applications. If you plan to try to correct the sewage problems by installing new field line systems, then you must provide evidence that all work has been done in compliance with the approval of the Hamilton County Health Department.

If you have any questions regarding the matters discussed in this letter, please do not hesitate to call me at 624-9927.

Sincerely,



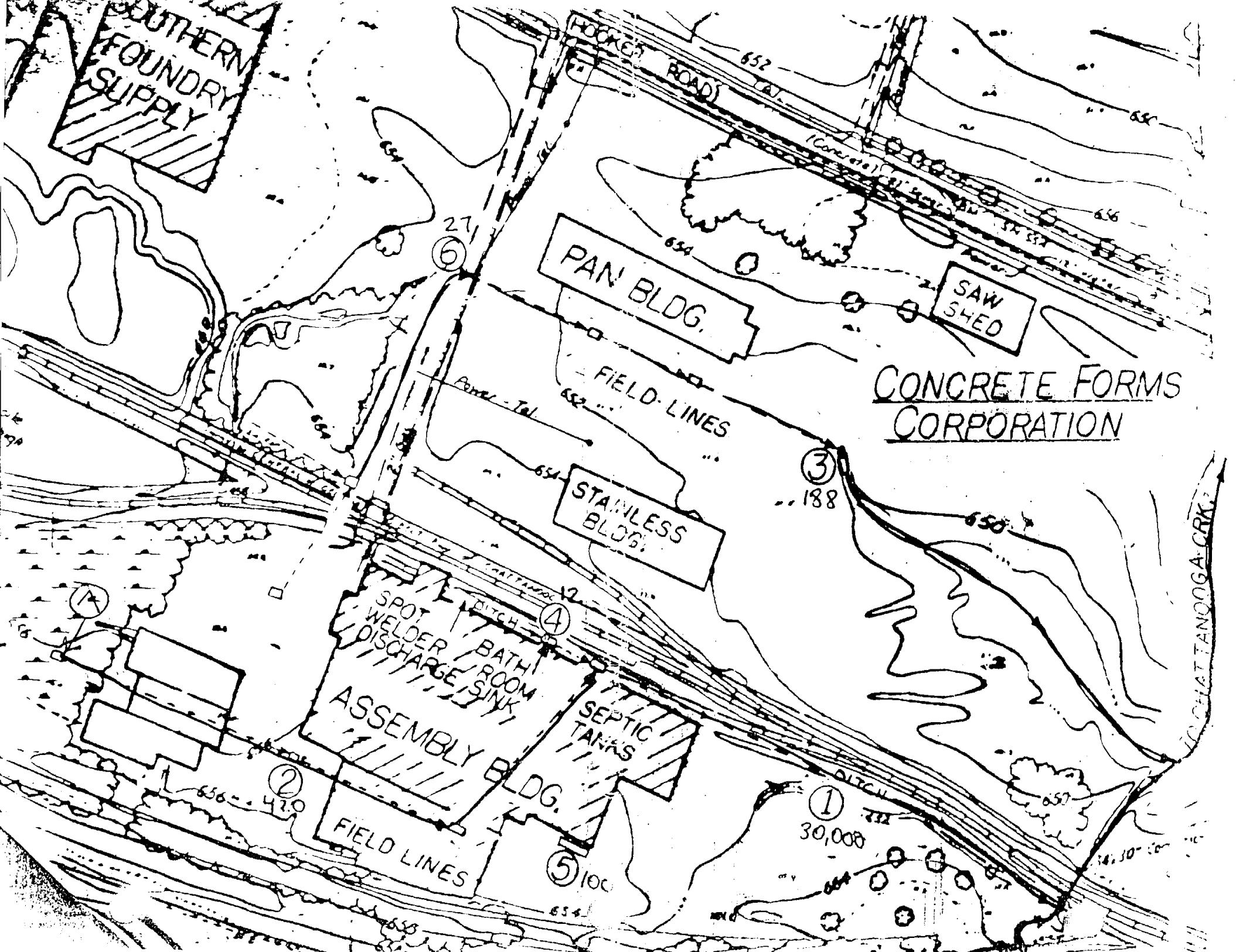
Philip L. Stewart  
Assistant Basin Manager  
Chattanooga Basin Office  
Division of Water Quality Control

PLS/ss

enclosures

cc: Hamilton County Health Department, c/o Dr. Frank Failing  
cc: Chattanooga Interceptor Sewer System, c/o Mr. Eugene Wright  
c: Division of Water Quality Control, Nashville, c/o Bob Slayden and Paul Davis  
bc: Southeast Regional Health Office

CONCRETE FORMS  
CORPORATION





SC

STATE OF TENNESSEE  
DEPARTMENT OF PUBLIC HEALTH  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406

Please Address Responses To  
Division of Water Quality Control  
Chattanooga Basin Office  
2501 Milne Street  
Chattanooga, TN 37406

July 23, 1981

Mr. Dan Horsman, Vice President Manufacturing  
Concrete Forms Corporation  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: Domestic Sewage Discharges;  
Tennessee Water Quality Control Act

Dear Mr. Horsman:

As you know, this office has been investigating apparent sanitary sewer leaks and discharges at your plant. We have met with Mr. Jim Moore, Maintenance Supervisor, and he has shown us the storm sewer system, septic tank and field line areas, as well as locations of the restrooms which serve your plant. In addition, we have collected samples of the water at the four locations shown on the accompanying map attached to this letter. We have concluded from the results of these investigations that there are at least two direct sanitary wastewater discharges into the storm sewer system as well as apparent infiltration of wastewater from the field line absorption areas into the storm sewers.

Please refer to the map and note that the samples taken at points 1, 2, and 3 contained very high levels of fecal coliform bacteria, which indicate the water at these points is contaminated with sanitary sewage. The levels of fecal coliform bacteria found at sample points 1, 2, and 3 were 2,700, 41,000, and 7,600 per 100 milliliters of sample, respectively. The sample at point 2 was actually taken from the outlet of a 4 inch cast iron pipe draining into the catch basin (indicated as C.B. on the map), and we suspect this pipe is connected to the sanitary drains from the restrooms serving the new office area. Water at sample point 3 is apparently being contaminated by the field line area just upstream. The catch basin at point 4 is receiving a discharge from the sinks in the adjacent restroom. Although the contamination observed at point 1 may be partially attributed to the restroom discharge into the catch basin at point 2, it is likely that leachate from the field lines underneath the building is also adding to the problem. The relatively deep catch basins, storm sewer, and the deep drainage ditch at point 2 would tend to promote subsurface drainage from the field line into the storm water drainage system.

The danger to public health from the sewage discharges and field line leachate described above is obvious. We feel that the best solution to this problem is for your company to connect all of the discharges from the restrooms at the plant to the Chattanooga Sanitary Sewer System. The City has informed us of the existence of a "private" 21 inch sewer line along Hooker Road, which connects to the City's Interceptor Sewer System at Wilson Road. It may be

Mr. Dan Horsman, Vice President, Manufacturing  
July 23, 1981  
Page Two

possible for the sewer connections to be made to this line, or you could run a line to the Wilson Road Interceptor. A third possibility would be to connect to the Chattanooga Coke and Chemical sewer which crosses your property, but this connection could only be made after assurances are received from the coke plant that the line can hydraulically handle the expected flows without overflow.

Another possible solution to the sewage problem is for you to work with the Hamilton County Health Department to upgrade or relocate the septic tank and field line systems (or storm sewers) so that contamination to the storm sewers is prevented. In order for this approach to be acceptable to this Division, you must provide evidence that all work has been completed with the approval of the County Health Department.

Positive action must be taken to eliminate the sewage contamination to the storm sewers, as this constitutes a public health hazard as well as pollution of the State's waters. Please inform this office within thirty (30) days of your receipt of this letter as to plans for correcting the noted problems. We are requesting that all work be completed by October 30, 1981. In the meantime, please call if you have any questions.

Sincerely,



Philip L. Stewart  
Environmental Engineer  
Division of Water Quality Control

PLS/ss

attachment

cc: Division of Water Quality Control, Nashville, c/o Ken Bunting  
cc: Hamilton County Health Department, c/o Dr. Frank Failing  
cc: Chattanooga Interceptor Sewer Systems, c/o Eugene Wright  
cc: Southeast Regional Health Office

Site No. TND 003328960  
Ref. No. 13



TPLX 6/12 RC  
JFP 6/12  
JLC 6/15  
EOS 6-4 JRM 5/16  
WLS 6/13 PLS 5/17  
LP 5/23 AZF 6/24  
JDH 5/14  
FILE  
CONCRETE FORMS  
CORP STP (INACTIVE)  
7/1984

STATE OF TENNESSEE  
DEPARTMENT OF HEALTH AND ENVIRONMENT  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406

May 15, 1984

Mr. Daniel Horsman, President  
Concrete Forms Corporation  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: 1977 Tennessee Water Quality Control  
Act; Hamilton County

Dear Mr. Horsman:

Enclosed is the latest and, we hope, final report dealing with the problem of domestic sewage in the plant surface water drainage system.

We are pleased that we can confirm the satisfactory connections of the sanitary wastewater discharges at your plant to the municipal sewer system. The attached report provides evidence which indicates the absence of domestic sewage in the plant surface water drainage system. With completion of this work, it now appears that your facility is in compliance with the provisions of the referenced Act.

Our thanks go to you and your staff for their cooperation and assistance. If you have any questions, please call us at 624-9921.

Sincerely,

Philip L. Stewart  
Assistant Basin Manager  
Chattanooga Basin Office  
Division of Water Management

PLS/EOS/tdm

cc: Hamilton County Health Department, c/o Dr. Frank Failing  
cc: Chattanooga Interceptor Sewer System, c/o Mr. Eugene Wright  
cc: Division of Water Management, Nashville, c/o Bob Slayden and Paul Davis  
cc: Southeast Regional Health Office  
cc: Chattanooga Interceptor Sewer System, c/o Mr. George Kurz

Site No. TND 003328960  
Ref. No. 14

## EXPLANATION OF FEDERAL STATUS DESIGNATIONS

FEDERAL STATUS, DETERMINED BY THE U. S. FISH AND WILDLIFE SERVICE<sup>1</sup>

LE - Taxa formally listed as endangered

LT - Taxa formally listed as threatened

PE - Taxa proposed to be formally listed as endangered

PT - Taxa proposed to be formally listed as threatened

S - Synonyms

C 1 - Taxa for which the Service has on file substantial information on biological vulnerability and threat(s) to support the appropriateness to list them as endangered or threatened species. Included are those taxa whose status in recent past is known, but may have already become extinct. Such possibly extinct taxa are indicated by an asterisk (\*). Double asterisk (\*\*) indicate taxa believed to be extinct in the wild, but known to be extant in cultivation.

C 2 - Taxa for which information now in possession of the Service indicated proposing to list them as endangered or threatened is appropriate, but for which substantial data on biological vulnerability and threat(s) are not currently known or on file to support a proposed rule. Such possibly extinct taxa are indicated by an asterisk (\*). Double asterisk (\*\*) indicate taxa believed to be extinct in the wild, but known to be extant in cultivation.

C 3 - Taxa that are no longer being considered for listing as threatened or endangered species. The following subcategories are used to further indicate the reason(s) for removal from consideration.

3A - Taxa for which the Service has persuasive evidence of extinction or being destroyed. If rediscovered, such taxa might acquire high priority for listing.

3B - Names that on the basis of current taxonomic understanding do not represent taxa meeting the Acts definition of "species." Such proposed taxa could be reevaluated in the future on the basis of subsequent research.

3C - Taxa that have proven to be more abundant or widespread than was previously believed and/or those that are not subject to any identifiable threat.

NOTE: The taxa listed in Categories 1 or 2 may be considered candidates for addition to the list of Endangered and Threatened plants, and, as such, consideration should be given them in environmental planning.

\*1. Federal Register, 50 (188), September 18, 1985, pp. 37958-37959, and September 27, 1985, pp. 39526-39527.

DEFINITIONS OF STATUS FOR THE OFFICIAL LIST  
OF  
TENNESSEE'S RARE PLANTS<sup>1</sup>

E - ENDANGERED, Species now in danger of becoming extinct in Tennessee because of:

- (a) their rarity throughout their range, or
- (b) their rarity in Tennessee as a result of sensitive habitat destruction or restricted area of distribution.

T - THREATENED, Species likely to become endangered in the immediately foreseeable future as a result of rapid habitat destruction or commercial exploitation.

S - SPECIAL CONCERN, Species requiring special concern because of:

- (a) their rarity or distinctive in Tennessee because the State represents the limit or near-limit of their geographic range, or
- (b) their status is undetermined because of insufficient information.

P - POSSIBLY EXTIRPATED, Species that have not been seen in Tennessee within the past 20 years.

\*1. Adapted from the Committee for Tennessee Rare Plants. 1978. The rare and vascular plants of Tennessee. J. Tenn. Acad. Sci. 53(4):128-133.

STATUS OF TENNESSEE'S RARE WILDLIFE

**STATUS DESIGNATIONS**

E-P - Endangered, Possibly extirpated

E - Endangered

T - Threatened

S - Special Concern

I - Inactive

D - Deemed in Need of Management

\* - Species Proposed for Federal Protection

THESE SPECIES ARE FOUND TO OCCUR IN HAMILTON COUNTY, TENNESSEE  
 TN DEPARTMENT OF CONSERVATION  
 Ecological Services Division  
 January 31, 1989

	<u>SCIENTIFIC / COMMON NAME</u>	<u>STATUS:</u> <u>FEDERAL</u>	<u>STATE</u>	<u>ESD</u>
/	GYRINOPHILUS PALLECUS TENNESSEE CAVE SALAMANDER	C2	T	T
2	IXOBRYCHUS EXILIS LEAST BITTERN		D	D
3	NYCTICORAX VIOLACEUS YELLOW-CROWNED NIGHT-HERON			
4	CATHARTES AURA TURKEY VULTURE		D	D
5	HALIAEETUS LEUCOCHEPHALUS BALD EAGLE	✓ Listed as Threatened LELT	E	E
6	BUTEO LINEATUS RED-SHOULDERED HAWK		D	D
7	FALCO PEREGRINUS PEREGRINE FALCON	CE	E	E
8	RALLUS ELEGANS KING RAIL			
9	RALLUS Limicola VIRGINIA RAIL			
10	TYTO ALBA COMMON BARN-OWL		D	D
11	THRYOMANES BEWICKII BEWICK'S WREN		T	T
12	LIMNOTHLYPIS SWAINSONII SWAINSON'S WARBLER		D	D
13	AMMOPHILA AESTIVALIS BACHMAN'S SPARROW	C2	E	E
14	AMMOORAMUS SAVANNARUM GRASSHOPPER SPARROW		T	T

## Hamilton Co.

<u>SCIENTIFIC / COMMON NAME</u>	<u>STATUS:</u>	<u>FEDERAL</u>	<u>STATE</u>	<u>ESD</u>
PERCINA TANASI 15 SNAIL DARTER	LT	T	T	
NEOTOMA FLORIDANA 16 EASTERN WOODRAT		D	D	
TRACHEMYS SCRIPTA TRICOSTATA 17 CUMBERLAND SLIDER				
ANOLIS CAROLINENSIS 18 GREEN ANOLE		D	D	
CNEMIDOPHORUS SEXLINEATUS 19 SIX-LINED RACERUNNER		D	D	
CAMBARUS EXTRANEUS 20 CHICKAMAUGA CRAYFISH	C2			
DROMUS DROMAS 21 DROMEDARY PEARLYMUSSEL	LE	E	E	
EPIOBELASMA TORULOSA		E	E	
LAMPSILIS ABRUPTA 23 PINK MUCKET	LE	E	E	
PLETHOBASUS COOPERIANUS 24 ORANGE-FOOT PIMPLEBACK	LE	E	E	
QUADRULA INTERMEDIA 25 CUMBERLAND MONKEYFACE	LE	E	E	
LITHASIA GENICULATA 26 ORNATE ROCKSNAIL	C2			
LITHASIA VERRUCOSA 27 VARICOSE ROCKSNAIL	C2			
ACER LEUCOERME 28 CHALK MAPLE		S	S	
POLYMNIA LAEVIGATA 29 TENNESSEE LEAFCUP	C2	S	S	
SILPHIUM LACINIATUM 30 COMPASS PLANT		T	T	
DIERVILLA RIVULARIS 31 MOUNTAIN BUSH-HONEYSUCKLE		T	T	

## Hamilton Co.

SCIENTIFIC / COMMON NAME	STATUS: FEDERAL	STATE		ESD
		S	S	
LONICERA FLAVA 32 YELLOW HONEYSUCKLE				
DIAMORPHA SMALLII 33 SMALL'S STONECROP				
SCUTELLARIA MONTANA 34 LARGE-FLOWERED SKULLCAP	LE	E		m
GELSEMIUM SEMPERVIRENS 35 YELLOW JESSAMINE		S	S	
TALINUM TERETIFOLIUM 36 ROUNDLEAF FAMEFLOWER		T	T	
LYSIMACHIA FRASERI 37 FRASER LOOSESTRIFE		m	m	
DELphinium EXALTATUM 38 TALL LARKSPUR		E	m	
SAXIFRAGA CAREYANA 39 CAREY SAXIFRAGE	C2	S	S	
VIOLA TRIPARTITA VAR TRIPARTITA 40		S	S	
SAGITTaria PLATYPHYLLA 41 OVATE-LEAVED ARROWHEAD		S	S	
LILium PHILADELPHICUM 42 WOOD LILY		m	m	
TRILLIUM LANCIFOLIUM 43 NARROW-LEAVED TRILLIUM		m	m	
TRILLIUM RUGELII 44		m	m	
TRITELEIA CROcea 45 YELLOW TRITELEIA				

Site No. TND 003328960  
Ref. No. 15

February 26, 1982

Name \_\_\_\_\_ Organization \_\_\_\_\_ Phone \_\_\_\_\_

William M. Foster Sou. Ry. Co. 266-1141

A. Gayle Jordan Sou. Ry. Co. (202) 383-4428

H. B. Wyche, Jr. Sou. Ry. 404/529-1493

J. B. Hilton Sou. Ry. 615-698-1318

D. E. Anderson Sou. Ry. 615-521-1407

R. T. Neumann Sou. Ry. 615-266-0188

Gayle Doughty Ten-American 266-3000

Frances Alexander " " "

Bill Hobbs " " "

Dave Snyder " " "

Reed Wellerison F.S.A. 404/551-3931

GEORGE E. KURTZ City of Chattanooga System Engineering Services 615/750-26

chibby Wamm Cha. Times

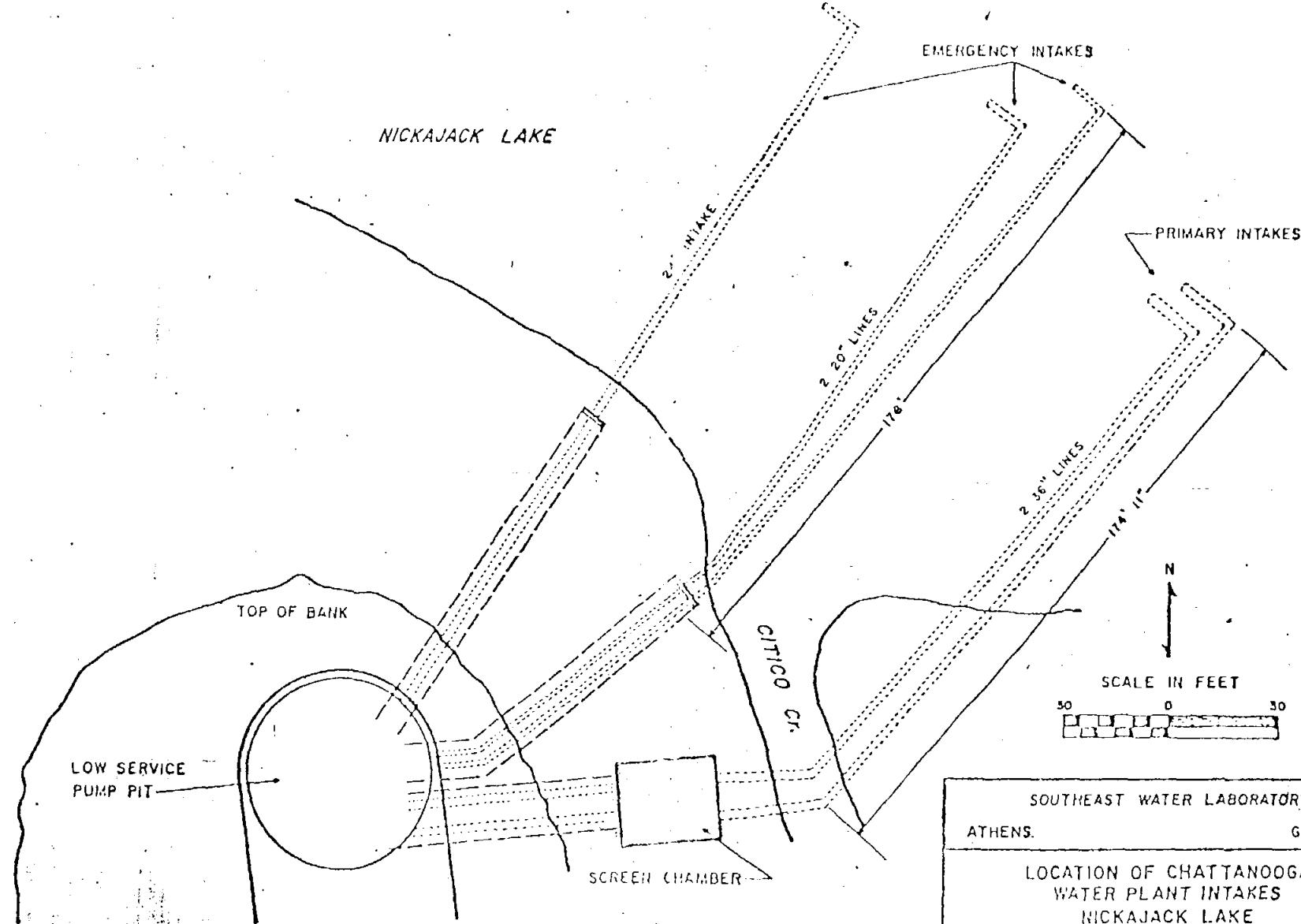
George Baker Cha. Times

TERRY WHALEN DWQC

Joe Hartman Tr. Water Quality Control 615/624-99

Jack McCormick Tr. Water Quality Control 615/624-9921

Eugene Wright City of CHATT. I.S.S. Supt. 615/757-5626



SOUTHEAST WATER LABORATORY  
ATHENS, GEORGIA

LOCATION OF CHATTANOOGA  
WATER PLANT INTAKES  
NICKAJACK LAKE

U.S. DEPARTMENT OF THE INTERIOR  
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION  
SOUTHEAST REGION ATLANTA, GEORGIA

Site No. TND 003328960  
Ref. No. 16

TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

DATE: November 19, 1987

TO: Ferman Miller, Division of Superfund, Chattanooga

FROM: CJS Craig Stannard, Division of Ground Water Protection,  
Chattanooga  
SUBJECT: Information Concerning Wells in the Chattanooga Area

As per your request, wells in the Chattanooga area, south of the Tennessee River, east of Lookout Mtn., and west of Missionary Ridge are listed and described below:

1. Uniform Rental Services Inc. has one or more wells at its plant on Tennessee Avenue. Specific details are not known.
  2. Velsicol Chemical Corporation has several monitoring wells at "Residue hill." *checklist no. active private*
  3. Southern Wood Piedmont Company at 400 East 33rd Street has at least sixteen monitoring wells of shallow depth.
  4. Chattanooga Glass Company has a well at its plant facility at 401 West 45th Street. According to company officials it was drilled by Bacon Well Drilling Company in 1982 and it is approximately 325 feet deep. The well water, which is used for industrial purposes only, is reportedly of good quality and quantity.
  5. Southern Cellulose Products Inc. has two wells located on 38th Street just east of Chattanooga Creek. According to company officials, the two wells were drilled in 1976 by Miller Drilling Company and are approximately 150 feet deep. Only one of the wells is currently in use. The other well is auxilliary. The water withdrawn is used for processing purposes only and the water quality and quantity are reportedly good.
  6. Tennessee Truck Parts Company at 400 East Main St. has a well that is reportedly used for industrial purposes only. It is 145 feet deep and was completed in 1979.
  7. Will-Wear Hosiery has a well located at or near its 2000 Stuart Street plant location. The well is reportedly 1,301 feet deep and is used for industrial processes only.
  8. Chattanooga State College at 4501 Amnicola Highway has a 512 foot deep well that is used to supply water to the campus water fountain.

9. Wheland Foundry at 2800 South Broad Street has a 61 foot deep well that is used for monitoring purposes.
10. Ledco Inc. at 3535 St. Elmo Avenue has a 250 foot deep well that provides water for the company's heat pump.
11. Gateway Hosiery Mills at 1220 East Main Street reportedly has a well that is used to provide processing water for its operations. The well is of unknown depth but is reportedly contaminated with perchloroethylene, benzene and a number of other organic chemicals at the ppm level. The well was reportedly drilled by Miller Drilling Company.
12. Alco Chemical Corporation at 909 Miller Avenue has a 600 foot deep well that provides water for industrial uses at the plant.
13. A well located at 1400 Citico Avenue, belonging to Robert Nabors, is reportedly 343 feet deep and was drilled earlier this year. It is not being used at this time.
14. A well has recently been completed for a car wash that is being built near the intersection of Wilcox Blvd. and Chamberlain Avenue. Its depth is not known but it was reportedly drilled by Miller Drilling Company. *In progress JLC Nov 16, 77*

The wells are listed 1-14 on the enclosed location map. Well log information concerning some of the wells is also enclosed.

CJS/tdm

Enclosures

cc: Robert Powell, Division of Superfund, Nashville

Site No. TND 003328960  
Ref. No. 17

# STATE OF TENNESSEE WATER QUALITY STANDARDS

RULES OF THE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
BUREAU OF ENVIRONMENT  
DIVISION OF WATER POLLUTION CONTROL

DECEMBER, 1991

CHAPTER 1200-4-3  
GENERAL WATER QUALITY CRITERIA

CHAPTER 1200-4-4  
USE CLASSIFICATIONS FOR SURFACE WATERS

(Rule 1200—4—4—.01, continued)

## (7) Lower Tennessee River Basin (Including Conasauga Basin)

STREAM	DESCRIPTION	DOM	IND	FISH	REC	IRR	LW&W	NAV
Tennessee River	Tenn-Ala State Line (Mile 416.5) to the POT Light (Mile 448.0)	X	X	X	X	X	X	X
Unnamed Tributary	At Tenn. River Mile 417.5; Mile 0.0 to Origin			X	X	X	X	
Battle Creek	Mile 0.0 to Origin	X	X	X	X	X	X	
Big Fiery Gizzard	Mile 0.0 to Origin			X	X	X	X	
Little Fiery Gizzard	Mile 0.0 to Origin			X	X	X	X	
Unnamed Tributary	At Little Fiery Gizzard Mile 0.6; Mile 0.0 to Origin			X	X	X	X	
Sequatchie River	Mile 0.0 to 3.5	X	X	X	X	X	X	
Sequatchie River	Mile 3.5 to 41.0	X	X	X	X	X	X	X
Little Sequatchie River	Mile 0.0 to Origin			X	X	X	X	
Clifty Creek	Mile 0.0 to Origin			X	X	X	X	
Sewanee Creek	Mile 0.0 to 4.0			X	X	X	X	
Sewanee Creek	Mile 4.0 to Origin	X		X	X	X	X	
Holywater Creek	Mile 0.0 to Origin	X		X	X	X	X	
Scott Creek	Mile 0.0 to Origin	X		X	X	X	X	
Sequatchie River	Mile 41.0 to 43.9			X	X	X	X	
Sequatchie River	Mile 43.9 to 74.0	X	X	X	X	X	X	
Sequatchie River	Mile 74.0 to 78.4			X	X	X	X	
Sequatchie River	Mile 78.4 to Origin	X	X	X	X	X	X	
Coops Creek	Mile 0.0 to 0.8			X	X	X	X	
Coops Creek	Mile 0.8 to Origin			X	X	X	X	
Tennessee River	Mile 448.0 to 460.6 (Chattanooga Creek)			X	X	X	X	X
Shoal Creek	Mile 0.0 to Origin			X	X	X	X	
Unnamed Tributary	At Tenn. River Mile 458.7; Mile 0.0 to Origin			X	X	X	X	
Lookout Creek	Mile 0.0 to Georgia-Tenn State Line			X	X	X	X	
Black Creek	Mile 0.0 to 1.6			X	X	X	X	
Black Creek	Mile 1.6 to Origin			X	X	X	X	
Chattanooga Creek	Mile 0.0 to Georgia-Tenn State Line			X	X	X	X	
Tennessee River	Mile 460.6 to 499.4 (Hiwassee)	X	X	X	X	X	X	X
Citico Creek	Mile 0.0 to Origin			X	X	X	X	
South Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line			X	X	X	X	
Friar Branch	Mile 0.0 to Origin			X	X	X	X	
West Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line			X	X	X	X	
Spring Creek	Mile 0.0 to Georgia-Tenn State Line			X	X	X	X	
Mackey Branch	Mile 0.0 to Origin			X	X	X	X	
Ryall Springs Branch	Mile 0.0 to Origin			X	X	X	X	
Unnamed Tributary	At Tenn. River Mile 469.2; Mile 0.0 to 1.5			X	X	X	X	
Unnamed Tributary	Mile 1.5 to Origin			X	X	X	X	
North Chickamauga Creek	Mile 0.0 to Origin			X	X	X	X	
Unnamed Tributary	At N. Chickamauga Creek Mile 0.7; Mile 0.0 to 0.3			X	X	X	X	
Unnamed Tributary	Mile 0.3 to Origin			X	X	X	X	
Unnamed Tributary	Mile 1.0 to Origin			X	X	X	X	
Wolf Creek	Mile 0.0 to Origin			X	X	X	X	
Sale Creek	Mile 0.0 to Origin			X	X	X	X	
Roaring Creek	Mile 0.0 to Origin			X	X	X	X	
Brush Creek	Mile 0.0 to 2.5			X	X	X	X	

Site No. TND 003328960  
Ref. No. 18

## TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## ENVIRONMENTAL LABORATORIES

Sample Source Haner CorpI.D. None

Stream Mile \_\_\_\_\_ Depth \_\_\_\_\_

County Hamilton Field No. 1Collected: Date 10/15/90 Time 12:45 By DMSContact Hazard PoST(Pb, Cd)

Signature of Sampler \_\_\_\_\_

## Inorganic Analysis, Solids

Sample type  
 Sediment  Tissue  Air  OtherSample Priority  
 Emergency  Legal  Routine  Ambient

Requested priority date \_\_\_\_\_

Laboratory Number KO10080Received: Date 10/16/90 Time 0930 by EamSampling Agency:  APC  SWM  DOT FSF  SSF  FUST  SU\$T  EEP WS  GW  WP  DRH  Other \_\_\_\_\_Send Report to David Smith  
DSWm chart.

code	<input checked="" type="checkbox"/>	Sediment	Unit	value	code	<input checked="" type="checkbox"/>	Tissue	Unit	value	code	<input checked="" type="checkbox"/>	EP Toxicity	Unit	value
01108		aluminum, Al	mg/kg		81666		aluminum, Al	mg/kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg		01004		arsenic, As	mg/kg		01005		barium, Ba	µg/L	2760
01008	<input checked="" type="checkbox"/>	barium, Ba	mg/kg	154	81658		barium, Ba	mg/kg		01025		cadmium, Cd	µg/L	262
01023		boron, B	mg/kg		81657		boron, B	mg/kg		01030		chromium, total Cr	µg/L	410
01028	<input checked="" type="checkbox"/>	cadmium, Cd	mg/kg	33.6	71940		cadmium, Cd	mg/kg		01049		lead, Pb	µg/L	126000
00917		calcium, Ca	mg/kg		71939		chromium, Cr	mg/kg		71890		mercury, Hg	µg/L	0-40.2
01029	<input checked="" type="checkbox"/>	chromium, Cr	mg/kg	189	81659		cobalt, Co	mg/Kg		01065		<td>µg/L</td> <td></td>	µg/L	
01038		cobalt, Co	mg/kg		71937		copper, Cu	mg/kg		01145		selenium, Se	µg/L	
01043		copper, Cu	mg/kg		81660		iron, Fe	mg/kg		01075		silver, Ag	µg/L	
01170		iron, Fe	mg/kg		71936		lead, Pb	mg/kg		00723		cyanide, CN	µg/L	
01052	<input checked="" type="checkbox"/>	lead, Pb	mg/kg	4590	81741		manganese, Mn	mg/kg				Other		
00924		magnesium, Mg	mg/kg		71930		mercury, Hg	mg/kg						
01053		manganese, Mn	mg/kg		01069		nickel, Ni	mg/kg						
71921	<input checked="" type="checkbox"/>	mercury, Hg	mg/kg	0.23	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg		81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg		71938		zinc, Zn	mg/kg						
01078		selenium, Se	mg/kg		34326		cyanide, CN	mg/kg						
00934		silver, Ag	mg/kg		34468		phenols	mg/kg						
01093		sodium, Na	mg/kg				Coal							
00721		zinc, Zn	mg/kg				ash	%						
		cyanide, CN	mg/kg				heat content	BTU						
		nitrogen, ammonia	mg/kg				Moisture	%						
00633		nitrogen, NO <sub>2</sub> & NO <sub>3</sub>	mg/kg				sulfur	%						
		nitrogen, total kjeldahl	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	83.7										
32731	<input checked="" type="checkbox"/>	phosphorus	mg/kg	1.51										
00668		phosphate, total	mg/kg											

Signature of Unit Supervisor: \_\_\_\_\_

Edward M. Cherry

Date JAN 16 1991

Date \_\_\_\_\_

Signature of Unit Supervisor: \_\_\_\_\_

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified below.  
Comments: \_\_\_\_\_

33-374

JAN 6, 1991

## TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## ENVIRONMENTAL LABORATORIES

Sample Source Lander CorpI.D. 10111

Stream Mile \_\_\_\_\_ Depth \_\_\_\_\_

County Hamilton Field No. 2Collected Date 10/15/90 Time 1250 By JMSContact Hazard DUST (Pb Cr)Signature of Sampler Dale M. Smith

## Inorganic Analysis, Solids

Sample type  
 Sediment  Tissue  Air  OtherSample Priority  
 Emergency  Legal  Routine  Ambient

Requested priority date \_\_\_\_\_

Laboratory Number KO10081Received: Date 10/16/90 Time 0930 by EamSampling Agency:  APC  SWM  DOT FSF  SSF  FUST  SUST  EEP WS  GW  WP  DRH  Other \_\_\_\_\_Send Report to David Smith  
DSWM Chatt

code	✓*	Sediment	Unit	value	code	✓	Tissue	Unit	value	code	✓	EP	Toxicity	Unit	value
01108		aluminum, Al	mg/kg		81666		aluminum, Al	mg/kg		01000		arsenic, As	µg/L		
01003		arsenic, As	mg/kg		01004		arsenic, As	mg/kg		01005		barium, Ba	µg/L	3530	
01008	✓	barium, Ba	mg/kg	120	81658		barium, Ba	mg/kg		01025		cadmium, Cd	µg/L	202	
01023		boron, B	mg/kg		81657		boron, B	mg/kg		01030		chromium, total Cr	µg/L	22	
01028	✓	cadmium, Cd	mg/kg	19.9	71940		cadmium, Cd	mg/kg		01049		lead, Pb	µg/L	22900	
00917		calcium, Ca	mg/kg		71939		chromium, Cr	mg/kg		71890		mercury, Hg	µg/L	20.2	
01029	✓	chromium, Cr	mg/kg	157	81659		cobalt, Co	mg/Kg		01065		nickel, Ni	µg/L		
01038		cobalt, Co	mg/kg		71937		copper, Cu	mg/kg		01145		selenium, Se	µg/L		
01043		copper, Cu	mg/kg		81660		iron, Fe	mg/kg		01075		silver, Ag	µg/L		
01170		iron, Fe	mg/kg		71936		lead, Pb	mg/kg		00723		cyanide, CN	µg/L		
01052	✓	lead, Pb	mg/kg	1670	81741		manganese, Mn	mg/kg							
00924		magnesium, Mg	mg/kg		71930		mercury, Hg	mg/kg							
01053		manganese, Mn	mg/kg		01069		nickel, Ni	mg/kg							
71921	✓	mercury, Hg	mg/kg	0.20	01149		selenium, Se	mg/kg							
01068		nickel, Ni	mg/kg		81742		silver, Ag	mg/kg							
00938		potassium, K	mg/kg		71938		zinc, Zn	mg/kg							
01148		selenium, Se	mg/kg		34326		cyanide, CN	mg/kg							
01078		silver, Ag	mg/kg		34468		phenols	mg/kg							
00934		sodium, Na	mg/kg												
01093		zinc, Zn	mg/kg												
00721		cyanide, CN	mg/kg												
		nitrogen, ammonia	mg/kg												
00633		nitrogen, NO <sub>2</sub> & NO <sub>3</sub>	mg/kg												
		nitrogen, total kieldahl	mg/kg												
		oil and grease	mg/g												
		hydrocarbons, total	mg/g												
		percent solids	%	88.5											
32731	✗	phenols	mg/kg	0.41											
00668		phosphate, total	mg/kg												

\* please designate desired analyses by placing a checkmark before the appropriate parameter.

DIT 30111 AB (rev. 8/89)

Date NOV 27 1990

Signature of Unit Supervisor:

Edward M. Gray

Date JAN 16 1991

Signature of Unit Supervisor:

Date

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified below.

Comments:

TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT  
ENVIRONMENTAL LABORATORIES Laboratory No.

Sample Source Landes corp  
I.D. hole  
Stream Mile \_\_\_\_\_ Depth \_\_\_\_\_  
County Hamilton Field No. 3  
Collected: Date 10/15/90 Time 1305 By DM  
Contact Hazard none

## Inorganic Analysis, Solids

Sediment  Tissue  Air  Other

Sample Priority DEC 28 1990  
 Emergency  Legal  Routine  Ambient

Requested priority date \_\_\_\_\_

Laboratory Number K010082  
Received: Date 10/16/90 Time 0930 by 8am  
Sampling Agency:  APC  SWM  DOT  
 FSF  SSF  FUST  SUST  EEP  
 WS  GW  WP  DRH   
 Other

Send Report to David Smith  
Dswm chatt.

\* please designate desired analyses by placing a check mark before the appropriate parameter.

Signature of Unit Supervisor: Laura L Adams  
Signature of Uni. Supervisor:

Date 12-27-90  
Date

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified below.  
Comments: Chain of custody attached to 90-116245

Site No. TND 003328960  
Ref. No. 19

# TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

DATE: 25 November 1986

TO: SIU Files

FROM: G.S. Garuthers

SUBJECT: Details of Telecon - pertinent site information.

FROM	TO	DATE
SIU	Hamilton Co File	

#### Details of conversation:

Mr. Burrell is in charge of the cross-connection monitoring program for TAWC. He did not know of any households which were using well water for domestic purposes. There are numerous private wells in the Chattanooga urban area, according to Mr. Burrell, but they are used only for watering gardens, washing cars, etc. or are commercial or industrial process water wells. TAWC's cross-connection program actively discourages household use of well water by prohibiting interconnections between private and public water supply systems, Mr. Burrell said.

GSC/15

Site No. TND 003328960  
Ref. No. 20

CFC ag, file

TRIP REPORT

OWNER/FACILITY Chattanooga Coke and Chemical Co. SITE # 33547

TYPE FACILITY Producer under demolition

COUNTY Hamilton CITY Chattanooga DATE 29 Jan 90

PURPOSE OF VISIT To purge monitoring wells with the contractor Westinghouse

INDIVIDUALS CONTACTED Tom Pelham, Kevin Maher - Sou. Coke; WGOW Radio Deann Bright;

WDEF-TV Stephen Ruf; Dunn Henry, Andrew Collins

OTHER DSF PERSONNEL PRESENT None

WEATHER CONDITIONS 45-55°, windy, cloudy-cold

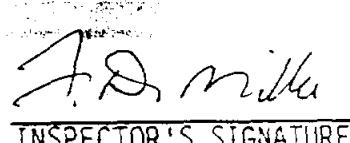
24 hour hard rain stopped at 12:30 p.m. 1/29.

SAMPLES COLLECTED YES        NO X

PHOTOS TAKEN YES X NO       

COMMENTS AND DISCUSSION: FDM arrived on-site at 1:00 p.m. The 2 Westinghouse men were setting up to purge the control well nest; they arrived at 11:45 and were at lunch 12 1 p.m.

FDM met Stephen Ruf, a reporter for WDEF-TV, at 1:30 pm at the gate. Mr. Crane, a PRP, had stated not to let the media on-site. That request was complied with, but Mr. Ruf was very unhappy. Mr. Ruf interviewed FDM for 50 minutes, standing up and outside. Mr. Ruf had seen the public meeting notices for Natl Micro, D. M. Steward, and Mor-Flo and asked about those sites also. FDM described the Chattanooga Coke background and current status, accenting the well sampling. Hypothetical and long-term cases for Chattanooga Coke were not commented on because of no current, legally defensible lab data. Mr. Ruf asked about Chattanooga Creek, the Amnicola Dump, other well drilling and sampling in Chattanooga, and the Superfund process. That same evening FDM was on the Channel 12-local news. The story had been primed the night before during the Super Bowl half time.

  
J.D. Miller  
INSPECTOR'S SIGNATURE

2/2/90  
DATE 90-06

TRIP REPORT

The well-purging train used by Westinghouse was assembled with a nitrogen cylinder, regulator, control box, 3/8 inch polyethylene tubing, a stainless pump at the well bottom, more polyethylene tubing, and a 3 gallon bucket to measure the volume. Westinghouse also recorded pH, conductivity, and temperature for the purged water. The deep well at #1 well nest was purged 60 gallons or 3 well volumes (.16 gal/foot).

Mr. Mahar, a consultant from Buffalo, NY, is retired from the Coke and Steel industry. He is to split samples throughout the next two days. He commented on the polyethylene tubing contributing phthalates to the tests; he asked for a copy of Mr. Miller's well drilling logs. He asked for two weeks lead time on sample splitting in the future.

Westinghouse said the #1 Shallow well was the only one of the 8 not developed, and therefore very muddy, while purging. The #1 deep well took 3 hours to purge.

FDM met Deann Bright, a reporter for WGOW-radio, at 3:45 at the gate. Ms. Bright interviewed FDM for 20 minutes, standing-up and outside. Again hypothetic and long-term cases for Chattanooga Coke were not commented on because of no current, legally defensible lab data. FDM called WSE after Ms. Bright left, to report the 2 media contacts were complete.

The #1 shallow well purging was begun while the deep well was being purged. Westinghouse moved the purging operation at 4:45 to the #2 nest. Mr. Mahar said photograph approval was required and if photos were really necessary. FDM had one shot of the purging at the #1 nest, and decided to talk to WSE the next morning. Apparently Mr. Mahar is concerned about the photos showing the shutdown, partially demolished plant in a bad light.

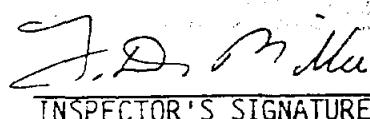
Mr. Mahar said he thought the hazardous waste stored near the #2 nest was recycled to make coke and not shipped as waste.

Mr. Mahar asked Miller and Henry how during drilling we knew there were no underground tanks or pipelines. Miller said the DSF had a site plan showing some lines and Henry said the rig crew can tell when metal is struck by the sound of the auger rotating. (Miller showed Mahar the big Site Plan the next day).

Mahar and Miller exchanged business cards.

Westinghouse said they would complete purging the shallow #2 well today but not the deep. FDM left the site at 5:10.

## TRIP REPORT

OWNER/FACILITY Chattanooga Coke & Chemical SITE # 33547TYPE FACILITY Producer under demolitionCOUNTY Hamilton CITY Chattanooga DATE 30 Jan 90PURPOSE OF VISIT To sample well nests #1 and #2 for groundwater.INDIVIDUALS CONTACTED Kevin Mahar - Sou Coke; Westinghouse: D. Henry, A. Collins.OTHER DSF PERSONNEL PRESENT G. S. Caruthers, C. J. StannardWEATHER CONDITIONS 30 - 50°, mostly cloudySAMPLES COLLECTED YES  NO   
PHOTOS TAKEN YES  NO COMMENTS AND DISCUSSION: FDM and CJS arrived on site at 8:55 a.m. Westinghouse was purging at the #2 well nest. At 9:00 a.m., all involved parties were there, namely Mr. Mahar and Gordon Caruthers.Well sampling was a 3 man job. One man raised and lowered the bailer. We used the long stainless steel bailers from Westinghouse, and the UST polyurethane twine.All 3 men wore the latex surgeons gloves. Whoever bottled the samples from the bailer also collected Mr. Mahar's VOA samples, because of problems keeping air bubbles out of the vial and the septum falling out of the cap ring.The third man reeled and let out the twine for bailing. This man also took the photographs. F. D. Miller did all the documentation. FDM was assisted by GSC and CJS in tagging, sealing, and bagging the DSF samples into the coolers. Mr. Mahar transported his samples each day to technical abs on Cherokee Blvd. Mr. Mahar initially had problems figuring which preservative and bottle was used for each parameter. The DSF sample and Mr. Mahar collected samples alternatively from the  
INSPECTOR'S SIGNATURE2/2/90  
DATE

TRIP REPORT

bailer. First, we did the VOA (Mr. Mahar did not think that was right); then ~ BNA Extractables, which includes phenols, pesticides, and PCB; next cyanide (Mr. Mahar had a problem with getting a good test because of sulfide interference, even with the caustic soda-50% NaOH preservative); next total metals; lastly for DSF was mercury; Mr. Mahar also had a phenols jar.

Other health and safety considerations are DSF should have Tyvek suits and face shields to prevent potentially hazardous compounds in the water from being flung by the twine. Rubber boots or overshoes are strongly recommended for this site. The waste/mud is difficult to wash off.

The #1 deep well (120') took one hour to collect. Miller was the sampler. Throughout the two samples, FDM added 5 ml 50% caustic to make the cyanide sample alkaline and serve as the preservative. The sample and caustic were mixed in the bottle. Mr. Mahar already had caustic in his cyanide bottles.

We then sampled the #1 shallow well (23'). There was a sewage odor here, possibly leakage from sanitary sewer down Central Avenue. All shallow well samples were muddy with fine silt or clay. This shallow well took 30 minutes to collect the split samples. We then broke for lunch.

When we returned, we did not have a deconed bailer and Westinghouse was not on-site. A decision was made to go to Walter Wood for a brush. Mr. Mahar, accompanied by FDM, bought a steel wire brush to clean tubes with a long handle. When we returned to the site, Westinghouse was back and we got a clean bailer from them. The wire brush is no good for cleaning the inside of a stainless bailer because it scratches the surface.

We next sampled the #2 deep well (105'). That took 45 minutes. We followed up with the #2 shallow well (25'), which took 15 minutes.

It was 4 p.m. then and we decided to stop for the day, as planned. Half of the wells were sampled. Some work remained in getting the 2 coolers ready for shipment.

FDM

CFO cg, F.1e

TRIP REPORT

OWNER/FACILITY Chattanooga Coke and Chemical SITE # 33547

TYPE FACILITY Producer under demolition

COUNTY Hamilton CITY Chattanooga DATE 31 Jan 90

PURPOSE OF VISIT To sample well nests #3 and #4 for groundwater.

INDIVIDUALS CONTACTED Kevin Mahar-Sou. Coke; Westinghouse; D. Henry, A. Collins

OTHER DSF PERSONNEL PRESENT G. S. Caruthers, C. J. Stannard

WEATHER CONDITIONS 30-50°, mostly sunny

SAMPLES COLLECTED YES X NO  
PHOTOS TAKEN YES X NO

COMMENTS AND DISCUSSION: FDM and CJS drove to Greyhound first to ship the two coolers from the Jan. 30 work. We arrived on-site at 8:50. We must finish today because of a 6 PM flight for Mr. Maher.

CFO arrived on-site at 8:50. Dunn Henry went to Atlanta yesterday to get a short, small diameter, teflon bailer. A stainless bailer was lost down the #3 shallow well. Westinghouse was purging #3-S well this morning. Westinghouse will finish their work this afternoon and return to Atlanta. The State contractor is making pump tests and measuring water levels.

The CFO waited for Gordon to arrive at 9:20. Mr. Maher thought we should be getting composite samples.

The first well this date to sample was the #4 Deep (108'). Gordon is the bailer, Ferman the sampler, and Craig the reeler. This activity took 35 minutes. We then moved to the #4-Shallow well (17'). A kerosene-odor was smelled in the water bottles. GSC asked about the yellow drums and the trench on the Morningside Chemical

J.D. Miller

INSPECTOR'S SIGNATURE

2/2/90

DATE

TRIP REPORT

site, which was visible from the #4 nest. The shallow well took 15 minutes to sample, not counting the paperwork.

We decided not to stop for lunch and moved to the #3 Deep well (112'). This sample collection took 40 minutes. We finished at #3-S(17'), which was purged this same morning. Here we used the special teflon bailer. The sample collection took 25 minutes because this bailer had a much smaller capacity. Craig thought the water had a naphthalene-odor as at Morningside Chemical.

At approximately 1:00 p.m., Wayne Everett arrived on-site and discussed several items, site-related, with Kevin Mahar. FDM asked Mr. Mahar to write a letter requesting any discussed documents. A receipt for samples was signed by Mr. Mahar. We left the site at 1:30 for lunch.

One cooler was shipped that afternoon. The second cooler, by mistake, was delayed until the following morning.

Attachment - Receipt for Samples

Site No. TND 003328960  
Ref. No. 21

for slides

TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

FROM	TO	DATE

DATE: June 17, 1991

TO: Landes Company File (to be established)

FROM: Wayne S. Everett

**SUBJECT:** Activate States Contractor on immediate action to overpack hazardous materials accessible to the public.

On Thursday June 13, 1991, Mr. Guy Moose, Solid Waste Division in Chattanooga, informed Wayne Everett that trustees for the Landes property have failed to respond to requests through his efforts and OGC-E, Mr. Joe Sanders, to remove or handle identified hazardous substances in an approved manner which are accessible to the general public.

Communication with Attorney Wright Tisdale, trustee handling FMC interest for Landes Company, in Knoxville, Tennessee failed to get a favorable response from Friday June 7th through Thursday June 13th 1991.

On Thursday June 13, 1991 at approximately 7:00 PM EST, Wayne Everett telephoned Nashville Superfund Central Office and requested that the State's Contractor, Ferguson Harbor Service Inc., be authorized to overpack the existing hazardous materials through an immediate action. Mr. David Randolph contacted the State's Contractor relative to the authorized response. Mr. Bill Helton telephoned Wayne Everett at approximately 3:30 PM EST and stated Ferguson Harber Service, Inc. would have Messrs. Charles Crick and Kevin Wagner respond on Friday morning June 14, 1991.

On June 14, 1991, at approximately 11:30 EST Messrs. Crick and Wagner arrived in Chattanooga. Wayne Everett and Elizabeth Jayne met the men and went to the site at 314 Hooker Road, Chattanooga, Tennessee. Channel 12 news crew arrived within fifteen minutes of the state's personnel.

Messrs. Crick and Wagner donned their work clothing and proceeded to evaluate their assignment. The Ammonium Hydroxide plastic 10 gallon drum had been removed and was no longer available. However, oil, sludge, paint and other substances were still onsite. At Wayne Everett's direction the states' contractor packed four (4) 85 gallon drums with the following contents:

DRAFT #1

5 gal Hydraulic oil H-32

5 gal Hydraulic oil H H 6

5 gal hydrolic oil in w

Drum #2

1 gal Lowes latex paint

1 gal Lowes latex paint  
1 gal green enamel paint

1 gal green enamel paint  
1 gal brown enamel paint

1 gal. area mix for taping & texturing

1 gal prep mix for taping & texturing  
1 gal Prairie Industrial Adhesive

1 gal Prairie Industrial Adhesive  
1 gal Permafuse Bonding Adhesive

2 qts

- 1 -

19  
2 gts

2 gts

2 q6  
1 qt

full

Landes Company  
June 17, 1991  
Page 2

5 gas Sunnyside High gloss floor finish	full
5 gal Devee white flat latex	full
5 gal Petroleum Naptha UW1255	empty

Drum #3  
2 - 5 gal Black Jack Roof Cement  
5 gal unknown white paint

Drum #4                    Sludge Sample #CHTN-SS01-SS01  
Sludge  
Dirt  
Debris 1) Screew  
       2) Canvas  
       3) Poly  
       4) Wood

After overpacking, the four drums and a plastic wrapped package of burlap like material was secured in a small shed on the Landes property.

The following pictures were taken.

Slide 14 and 15. Sludge area at southwest side of the trash pile at the base of a pile of wooden pallets. Time 12:35 PM ESI. Elizabeth Jayne was present for Solid Waste Management and she also took a series of slide pictures of the total proceeding.

Slide 16. Northwest side of trash pile. High gloss metal Interlock Floor Finish. Time 12:45 PM

Slide 17. Northeast side of trash pile. Oil in five (5) gallon container.

Slide 18. Consolidation of cans at westside and north end of trash pile. Time 12:50 PM

Slide 19. Three over-pack drums with containers. Time 1:20 PM.

Slides 20 and 21 - Storage Shed and placing of overpacks in secure building.

Weather conditions was sunny and hot, temperature was in the upper 80's. The over pack was performed under Ferguson Harber Service Job 5465-5. One sample was taken of the sludge.

WSE/ph

Site No. TND 003328960  
Ref. No. 22

## TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

DATE: June 18, 1991

TO: *Landes Company File (to be established), 314 Hooker Road,  
Chattanooga, Tennessee 37410*  
FROM: *Wayne S. Everett*  
SUBJECT: *Log of Events and Immediate Action to Secure Sludges, Oil,  
and Paint Containers at Landes Company.*

On Friday, June 7, 1991, Mr. Guy Moose, Division of Solid Waste Management in Chattanooga Field Office, requested Wayne S. Everett to join him in evaluation of a general trash site on the Landes Company property. Mr. Moose informed Wayne Everett that he had a complaint relative to the property and had been involved with trying to evaluate the property concerning hazardous waste. Mr. Moose informed Wayne Everett that the Company has gone bankrupt.

Upon arriving at the Landes Company, Wayne Everett made the following observations at a dump site on the southern part of the Landes property. A railroad track bisects the Landes property and the trash which consisted of empty 55 gallon drums, paper, paint cans, wooden pallets and general trash that had been cleaned out of Warehouses were deposited on the south part of the property, which is owned by Landes Company.

Wayne Everett observed a 10 gallon plastic container that had Ammonium Hydroxide marked on the label. Mr. David Smith, with the Division of Solid Waste Management, used a pH meter and read 13.6 pH on the meter. The Ammonium Hydroxide container appeared to be approximately half full of the corrosive substance. This determination was made at 3:35 PM relative to the pH and observation of the contents. Just from opening the drum a very pungent odor was detected.

A 5 gallon plastic container of extra heavy duty degreaser concentrate was also noted. Labelling on the 5 gallon container said B C-10 Highly Concentrated Butal Cleaner.

A second 5 gallon plastic container was marked High Gloss Metal Floor Finish from the Spartan Company 110 North Westwood Avenue, Toledo, Ohio 43607.

Observation revealed an area approximately .4 foot square with sludges 3 inches deep of what appeared to be a separator sludge. A burlap line cover was under and on the sides of the sludge which had a blue-like appearance.

Approximately 100 feet northeast of the trash pile one could observe what appeared to be baghouse dust and foundry sand or a shredder fluff approximately 15 foot wide and 25 foot long and with a depth of 1½ to 2 feet deep.

Wayne Everett, Mr. Moose and Mr. David Smith stepped across the railroad track and entered the facilities of the Landes Company. Most of the warehouses were clear and clean of any debris. A warehouse on the western side of the property contained 18 paint cans and a five gallon container of what stated on the label was

Office Memorandum  
Landes Company  
June 18, 1991  
Page 2

Industrial Pan Handler from the Van Straaten Chemical Company. The container is a 5 gallon plastic container that has approximately 4 gallons of the substance remaining in the container.

Mr. Moose explained to Wayne Everett that the substances at the site were reported by the citizenry in the Alton Park area. Mr. Everett was also informed that Channel 12 News Media had already been onsite and found the substances in the trash pile. Mr. Moose requested information as to whether Superfund could be of assistance, and Wayne Everett explained that we could overpack the hazardous substances but we could not move the overpacks offsite at the present time.

On Monday June 10, 1991, Mr. Joe Sanders in Office of General Counseling for the environment was contacted by Mr. Moose and Wayne Everett relative to the substances on site at the Landes Company. Mr. Moose explained that the containers needed to be overpacked and Wayne Everett explained that Superfund could do that job with approval from Central Office. Joe suggested that the owners of the property be contacted again and give them a specified time to remove the containers and secure them out of public contact. We jointly agreed to allow 48 hours for the company to respond and secure all substances where public could not have contact with the Ammonium Hydroxide and/or paint, oil, grease, etc.

From Monday afternoon until Wednesday June 12, 1991, Mr. Moose worked with Mr. Tisdale, attorney for the Landes Company property, relative to securing the Ammonium Hydroxide and other substances of concern. On Thursday June 13, 1991 Wayne Everett was informed that no response has been received from Mr. Tisdale or other members of the Company.

On June 13, 1991, Wayne Everett contacted Mr. David Randolph and requested that the State's contractors be allowed to come in and overpack the substances of concern at the Landes Company.

WSE/ph

Site No. TND 003328960  
Ref. No. 23

Page 1 of 2

CERCLIS

NEW SITE DISCOVERY INFORMATION

SITE NAME: LANDES COMPANY

COUNTY: HAMILTON

SITE ADDRESS: 314 HOOKER ROAD

CHATTANOOGA, TENNESSEE

ZIP 37410

LATITUDE: 35/18/30 SIZE OF SITE: 13 acres

LONGITUDE: 34/59/43 QUADRANGLE: GA/TN Ft. Oglethorpe,  
106-NE, USGS 7.5' Series, 1982

(Attach a copy of the topo with site marked)

GENERAL DESCRIPTION OF SITE: The site is located at the intersection of Hooker Road and Wilson Road, in the Chattanooga Creek area. It consists of many large buildings on approximately 13 acres, with a railroad spur which cuts through the property. It is located in an industrial area, with residential areas being less than 1/4 mile away.

SITE STATUS:  ACTIVE  INACTIVE

RURA FACILITY:  YES  NO (Hazardous waste generator)

YEARS OF OPERATION: Pre-1947 TO 1989

WASTE BELIEVED PRESENT AND QUANTITIES:

Hydraulic oil, petroleum oil, paint waste, industrial and bonding adhesive, petroleum naptha, ammonium hydroxide (pH 12.4 - 13.6), B C-10 concentrated butyl cleaner, lead, and piles of searator sludges, baghouse dust, foundry sand and shredder fluff. Quantities unknown.

BRIEF DESCRIPTION OF POTENTIAL HAZARD: Contact hazard from surface contamination, possible surface water contamination, possible groundwater contamination.

CERCLIS

NEW SITE DISCOVERY INFORMATION

SITE OWNER: FMC Acquisition Corporation

ADDRESS: P. O. Box 158

Knoxville, Tennessee

ZIP 37901

PHONE: 800-621-4500

ALSO CONTACT: Wright Tisdale, Jr. (atty. for FMC)

Suite 547

Box 59039

Knoxville, Tennessee 37950

(615) 524-2763

SITE OPERATOR: (previous) Russell W. Landes -(Landes Corp.)

ADDRESS: 1623 Starboard Drive

Hixson, Tennessee

ZIP 37343

PHONE: (615) 877-4819

OTHER RESPONSIBLE PARTIES:

NAME: David C. Horsman (Pres.- Concrete Forms Corp.)

ADDRESS: 1505 Lyndhurst Drive

Chattanooga, Tennessee

ZIP 37405

PHONE: (615) 756-1924

NAME: Hal C. Snook (Pres.- CFC Fabrication Corp.)

ADDRESS: Unknown

PHONE: Unknown

DSF CONTACT: Jett Holloway

PHONE: (615) 624-9921

SITE CONTACT: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

ZIP \_\_\_\_\_

PHONE: \_\_\_\_\_

COMMENTS: The site has been operated as several different businesses over the years, with most businesses specializing in metal fabrication and concrete forms. The facility was cited with a Notice of Violation from DSWM under Rules 1200-1-11-.07(1)(b)1, Code (3510), Class A, and Rule 1200-1-11-.07.03(1)(b), Code (0010), Class C, in January 1991, for improper disposal of a hazardous waste (D008). In June of 1991, DSF was called in for Emergency Overpack of hazardous waste containers into drums. A copy of the topo map is attached.



Site No. TND 003328960  
Appendix D

Photographs

C-LINE #62564  
4"X6" PRINTS



Date/Time of Photo 2/7/94, 11:05 AM

Photo taken by Don VanHook

Location/Name Landes Company

Persons present Craig Stannard

Remarks Craig Stannard at sample point

LC-WS-03.

Signature *Craig Stannard*

Date/Time of Photo 2/7/94, 11:25 AM

Photo taken by Don VanHook

Location/Name Landes Company

Persons present Craig Stannard

Remarks Craig Stannard collecting

sample LC-WS-04. View looks to the  
southeast.

Signature *Craig Stannard*

C-LINE #62564  
4"X6" PRINTS



Date/Time of Photo 2/8/94, 9:00 AM

Photo taken by Curt Spaeth

Location/Name Landes Company

Persons present Craig Stannard, DV

Remarks Craig Stannard collecting

STAN

soil sample LC-SS-02. Don VanHook

assists.

Signature

*Craig Stannard*

Date/Time of Photo 2/8/94, 9:10 AM

Photo taken by Curt Spaeth

Location/Name Landes Company

Persons present Craig Stannard, DV

Remarks Craig Stannard collecting

STAN 804900's

soil sample LC-SS-03 while Don VanHook

looks on.

Signature

*Craig Stannard*

CLINE #52564  
4"X6" PRINTS

Date/Time of Photo 2/8/94, 9:20 AM

Photo taken by Craig Stannard

Location/Name Landes Company

Persons present Curt Spaeth

Remarks Curt Spaeth collecting soil

sample LC-SS-04. View looks to the  
southeast.

Signature Craig Stannard

Disc 10/5/81  
Ref# 5743

Page 1 of 2

CERCLIS

NEW SITE DISCOVERY INFORMATION

SITE NAME: LANDES COMPANY

COUNTY: HAMILTON

SITE ADDRESS: 314 HOOKER ROAD  
CHATTANOOGA, TENNESSEE

ZIP 37410

LATITUDE: 35/18/30

SIZE OF SITE: 13 acres

LONGITUDE: 34/59/43

QUADRANGLE: GA/TN Ft. Oglethorpe,  
106-NE, USGS 7.5' Series, 1982

(Attach a copy of the topo with site marked)

GENERAL DESCRIPTION OF SITE: The site is located at the intersection of Hooker Road and Wilson Road, in the Chattanooga Creek area. It consists of many large buildings on approximately 13 acres, with a railroad spur which cuts through the property. It is located in an industrial area, with residential areas being less than 1/4 mile away.

SITE STATUS: ACTIVE XX INACTIVE

RURA FACILITY: XX YES NO (Hazardous waste generator)

YEARS OF OPERATION: Pre-1947 TO 1989

WASTE BELIEVED PRESENT AND QUANTITIES:

Hydraulic oil, petroleum oil, paint waste, industrial and bonding adhesive, petroleum naptha, ammonium hydroxide (pH 12.4 - 13.6), B C-10 concentrated butyl cleaner, lead, and piles of searator sludges, baghouse dust, foundry sand and shredder fluff. Quantities unknown.

BRIEF DESCRIPTION OF POTENTIAL HAZARD: Contact hazard from surface contamination, possible surface water contamination, possible groundwater contamination.

CERCLIS

NEW SITE DISCOVERY INFORMATION

SITE OWNER: FMC Acquisition Corporation

ADDRESS: P. O. Box 158  
Knoxville, Tennessee ZIP 37901  
PHONE: 800-621-4500  
ALSO CONTACT: Wright Tisdale, Jr. (atty. for FMC)  
Suite 547  
Box 59039  
Knoxville, Tennessee 37950  
(615) 524-2763

SITE OPERATOR: (previous) Russell W. Landes -(Landes Corp.)

ADDRESS: 1623 Starboard Drive  
Hixson, Tennessee ZIP 37343  
PHONE: (615) 877-4819

OTHER RESPONSIBLE PARTIES:

NAME: David C. Horsman (Pres.- Concrete Forms Corp.)  
ADDRESS: 1505 Lyndhurst Drive  
Chattanooga, Tennessee ZIP 37405  
PHONE: (615) 756-1924

NAME: Hal C. Shook (Pres.- CFC Fabrication Corp.)

ADDRESS: Unknown  
PHONE: Unknown

DSF CONTACT: Jett Holloway PHONE: (615) 624-9921

SITE CONTACT: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE: \_\_\_\_\_

COMMENTS: The site has been operated as several different businesses over the years, with most businesses specializing in metal fabrication and concrete forms. The facility was cited with a Notice of Violation from DSWM under Rules 1200-1-11-.07(1)(b)1, Code (3510), Class A, and Rule 1200-1-11-.07.03(1)(b), Code (0010), Class C, in January 1991, for improper disposal of a hazardous waste (D008). In June of 1991, DSF was called in for Emergency Overpack of hazardous waste containers into drums. A copy of the topo map is attached.





CINE 72584  
16 PRINTS

Date/Time of Photo 2/7/94, 10:40 AM

Photo taken by Don VanHook

Location/Name Landes Company

Persons present Craig Stannard, CLS

Remarks Craig Stannard collecting

waste sample LC-WS-01. Curt Spaeth

9203 4049008

looks on. The Landes plant is in the  
background.

Signature

*Craig Stannard*

Date/Time of Photo 2/7/94, 10:50 AM

Photo taken by Don VanHook

Location/Name Landes Company

Persons present Craig Stannard, CLS

Remarks Craig Stannard collecting

waste sample LC-WS-02 while Curt Spaeth

looks on. Lookout Mountain is in the  
background.

Signature

*Craig Stannard*



CLINE 452-86  
PRINTS

Date/Time of Photo 2/7/94, 10:00 AM

Photo taken by Don VanHook

Location/Name Landes Company

Persons present Craig Stannard, CLS

Remarks Craig Stannard collecting

sample LC-SS-01 (background). Curt

+ 9389

Spaeth is marking the tags. Lookout

Mountain is in the background.

Signature *Craig Stannard*

Date/Time of Photo 2/7/94, 10:15 AM

Photo taken by Don VanHook

Location/Name Landes Company

Persons present Craig Stannard

Remarks Craig Stannard collecting

upgradient sediment sample LC-SD-04

+ 90N9889

Signature *Craig Stannard*



C-LINE #52564  
4x6" PRINTS

Date/Time of Photo 2/7/94, 8:30 AM

Photo taken by Don VanHook

Location/Name Landes Company

Persons present Craig Stannard, CLS

Remarks Craig Stannard collecting

sediment sample LC-SD-01. Curt Spaeth  
looks on.

Signature *Craig Stannard*

Date/Time of Photo 2/7/94, 8:55 AM

Photo taken by Don VanHook

Location/Name Landes Company

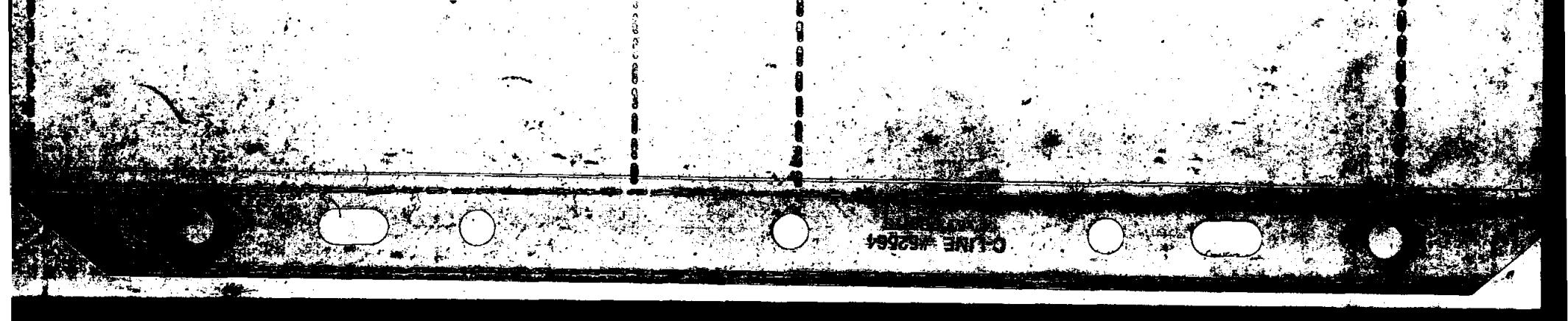
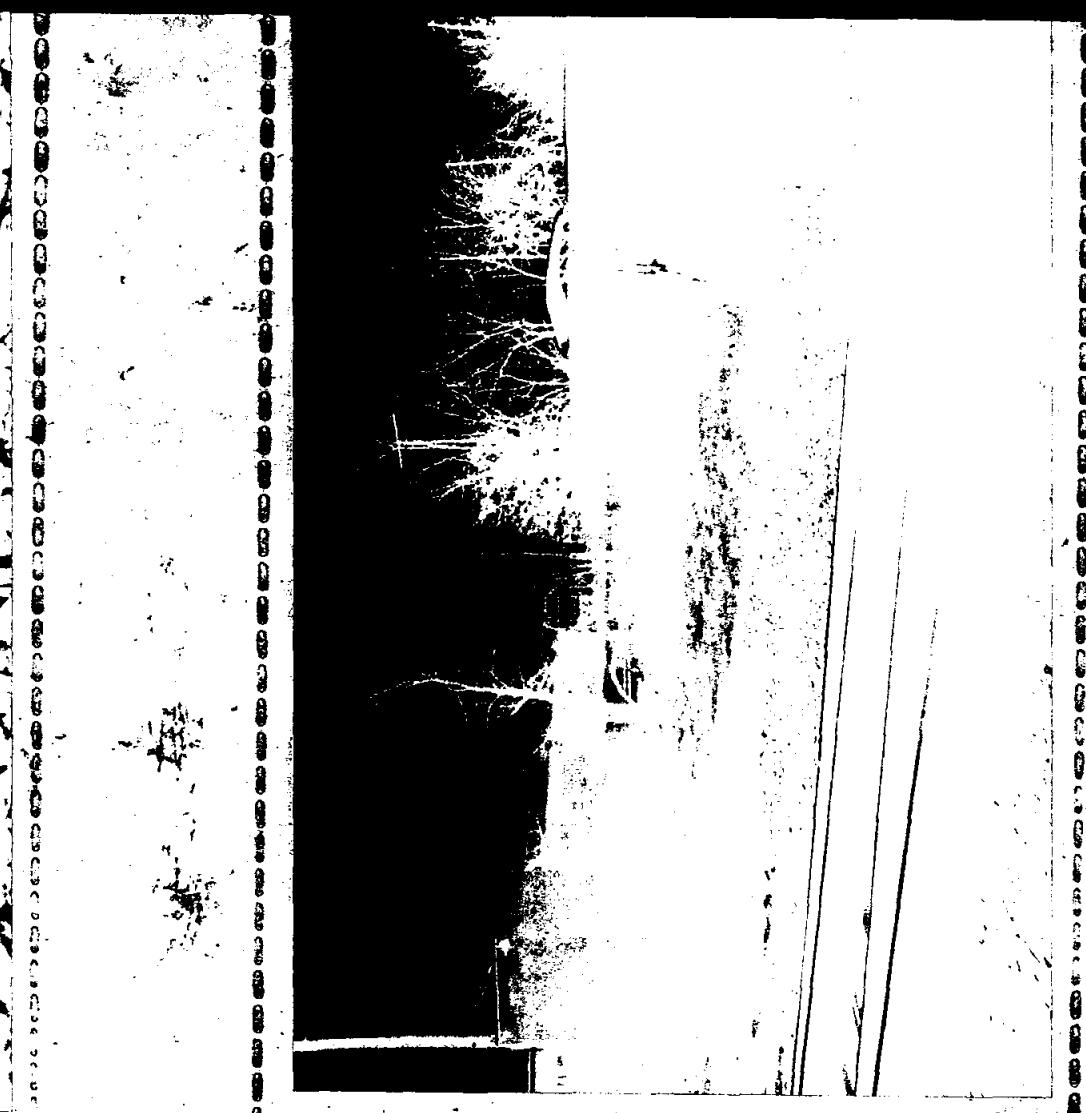
Persons present Craig Stannard

Remarks Sediment in pan from sample

point LC-SD-02 collected in wetland

next to dump at southeast corner of site.

Signature *Craig Stannard*



Date/Time of Photo 2/7/94, 9:10 AM

Photo taken by Don VanHook

Location/Name Landes Company

Persons present Craig Stannard

Remarks Craig Stannard at sample point

LC-SD-03 collecting a volatile sample.

Signature

*Craig Stannard*

Date/Time of Photo 2/7/94, 9:50 AM

Photo taken by Don VanHook

Location/Name Landes Company

Persons present Craig Stannard

Remarks Craig Stannard standing at

rear of sampling van. View looks

southeast. The Piney Woods

Elementary School is in the

background.

Signature

*Craig Stannard*

CASE #52564  
PRINTS



Date/Time of Photo 2/7/94, 1:10 PM

Photo taken by Don VanHook

Location/Name Landes Company

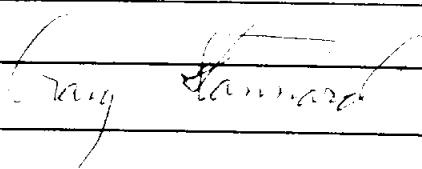
Persons present Craig Stannard, CLS

Remarks Craig Stannard collecting

sample LC-SS-05. Curt Spaeth

assists. The Landes plant is in the  
background.

Signature



Date/Time of Photo 2/7/94, 2:00 PM

Photo taken by Don VanHook

Location/Name Landes Company

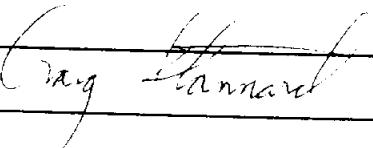
Persons present Craig Stannard, CLS

Remarks Craig Stannard collecting

downgradient sediment sample

LC-SD-05.

Signature



Site No. TND 003328960  
Ref. No. 24

Site No. TND 003328960  
Ref. No. 25

MEMORANDUM

TO: North Hawthorne Ave. Dump File #33550  
FROM: Craig Stannard(CJS), TDSF, CFO  
SUBJECT: Stream Flow and Site Data  
CC: Nashville TDSF  
DATE: July 27, 1992

On 7-8-92, CJS telephoned City of Chattanooga engineer, Drexyl Heidel (757-5026), and requested permission to visit the North Hawthorne St. Dump to observe and photograph the wood chipper/burner construction site. Drexyl said anytime would be OK, provided it was between the hours of 8 AM and 3:30 PM during the work week when the gate on the entrance road to the site was unlocked.

CJS asked about ownership of the site. Drexyl said the City of Chattanooga now owns the site. The city bought the site in 1991 from a Mr. Gary Gibson after a failure to pay back taxes on the site. Mr. Gibson had apparently bought the site earlier in 1991 from the former owner of the site, Robert P. Scott.

Drexel said that the groundwork for the proposed wood chipper/burner operation was nearly completed. The necessary 3 to 4 acres had been cleared of vegetation and approximately 25,000 cubic yards of clay (from various municipal construction sites around town) had been spread over the cleared area.

On 7-13-92, CJS telephoned Drew Thornton of TVA (632-2859) to request flow and fishery data for South Chickamauga Creek. He said the longterm average flow for the creek, as measured from 1929 to 1991, was 698 cfs. He, regrettably, had no fishery information on the creek. CJS also requested information on Chestee Creek in McMinn County. Drew said that in the vicinity of Etowah, the average flow is 181 cfs.

On 7-21-92, CJS spoke with Nancy Thomas and Wayne Everett (TDSF staff) concerning enforcement dates etc. for the Hawthorne Avenue Dump. CJS was informed that the site was promulgated on May 23, 1985, the site discovery was completed on November 1, 1979, the Preliminary Assessment was completed on December 12, 1984, and the Site Investigation was completed on July 1, 1979. Wayne mentioned that there are approximately 9,500 students at both the Chattanooga State Area Vocational Technical School and Chattanooga State Technical Community College.

Attached is the Tennessee Wildlife Resources Agency printout on fish production for the Tennessee River (Nickajack Lake).

1991  
**TWRA**  
**STATEWIDE**  
**SUMMARY OF CREEL CLERK EFFORT**

<b>RESERVOIR</b>	<b>ESTIMATED HOURS</b>	<b>ESTIMATED HOURS PER ACRE</b>	<b>ESTIMATED TRIPS</b>	<b>ESTIMATED TRIPS PER ACRE</b>
BOONE	205,463	46.71	56,304	12.81
CENTER HILL	452,750	24.85	192,447	10.56
CHEROKEE	668,916	22.08	186,184	6.14
CHICKAMAUGA	1,545,738	43.66	539,578	15.24
DALE HOLLOW	558,218	23.86	207,484	8.87
DOUGLAS	845,219	27.81	308,549	10.15
GUNTERSVILLE	140,624	28.12	58,430	11.69
KENTUCKY	1,572,259	14.27	486,887	4.42
NICKAJACK	264,054	25.46	89,516	8.63
NORMANDY	157,394	48.73	55,502	17.18
NORRIS	456,563	13.36	152,425	4.46
OLD HICKORY	185,127	8.23	71,916	3.21
PERCY PRIEST	179,039	12.61	65,013	4.58
REELFOOT	202,790	20.28	57,744	5.77
SOUTH HOLSTON	350,424	57.64	102,759	16.91
WATTS BAR	856,299	21.96	321,137	8.23
WOODS	173,587	44.41	65,833	16.84

NOTE: OLD HICKORY AND PERCY PRIEST RESERVOIRS  
WERE NOT CREELED FOR THE ENTIRE YEAR

## ANNUAL SUMMARY OF CREEL DATA FOR ALL ANGLERS BY RESERVOIR-1991

RESERVOIR=NICKAJACK

134

COMMON NAME	ESTIMATED NUMBER CAUGHT	ESTIMATED NUMBER HARVESTED	NUMBER CAUGHT PER HOUR	NUMBER HARVESTED PER HOUR	MEAN WEIGHT	PERCENT HARVESTED	NUMBER CREELED
GOLDEN SHINER	280.74	280.74	0.00	0.00	0.28	100.00	6
FLATHEAD CATFISH	374.33	374.33	0.00	0.00	2.25	100.00	8
BLUE CATFISH	8609.49	8094.79	0.03	0.03	3.27	94.02	184
CHANNEL CATFISH	23301.77	21944.84	0.09	0.08	2.00	94.18	498
BULLHEAD	421.12	421.12	0.00	0.00	2.34	100.00	9
FRESHWATER DRUM	3649.68	1263.35	0.01	0.00	8.53	34.62	78
WHITE BASS	3509.30	2994.61	0.01	0.01	0.78	85.33	75
YELLOW BASS	5942.42	4257.95	0.02	0.02	0.36	71.65	127
YELLOW PERCH	3930.42	3415.72	0.01	0.01	0.37	86.90	84
LARGEMOUTH BASS	59985.69	6691.07	0.23	0.03	2.26	11.15	1282
SMALLMOUTH BASS	1216.56	140.37	0.00	0.00	2.50	11.54	26
SPOTTED BASS	1122.98	655.07	0.00	0.00	1.07	58.33	24
WHITE CRAPPIE	2901.02	2433.12	0.01	0.01	0.61	83.87	62
BLACK CRAPPIE	4959.82	4538.70	0.02	0.02	0.66	91.51	106
UNIDENTIFIED SUNFISH	1450.51	1310.14	0.01	0.00	0.39	90.32	31

ANNUAL SUMMARY OF CREEL DATA FOR ALL ANGLERS BY RESERVOIR-1991

RESERVOIR=NICKAJACK

COMMON NAME	ESTIMATED NUMBER CAUGHT	ESTIMATED NUMBER HARVESTED	NUMBER CAUGHT PER HOUR	NUMBER HARVESTED PER HOUR	MEAN WEIGHT	PERCENT HARVESTED	NUMBER CREELED
	BLUEGILL	67986.90	60640.76	0.26	0.23	0.34	89.19
REDEAR SUNFISH	5708.47	5380.93	0.02	0.02	0.38	94.26	122
WARMOUTH	93.58	93.58	0.00	0.00	0.35	100.00	2

Site No. TND 003328960  
Ref. No. 26

Date: September 29, 1992

To: Tennessee Transformer File #33635

From: Craig Stannard, Geologist, TDSF CJS

Subject: Tennessee Transformer Site Reconnaissance and Fact Gathering

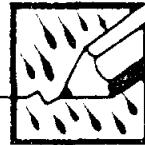
On 9-22-92, Craig Stannard telephoned the Chattanooga-Hamilton County Regional Planning Commission Office in Chattanooga (757-5216) and requested population data for the Tennessee Transformer site. Ms. Yuen Lee informed CJS that the population of Rossville is 3,601, the population of East Ridge is 21,101, the population of Lookout Mountain is 1,901, and the population of Fort Oglethorpe is 5,880.

Later that day, CJS telephoned Andrew (Drew) Thornton with the TVA Data Collection Services Office in Knoxville (632-2859) and requested stream flow data for Chattanooga Creek and Dobbs Branch. There was no data on Dobbs Branch but for Chattanooga Creek, the Flintstone gauging station showed an average flow over a 14 year period of approximately 87 cfs. This was for a drainage area of approximately 50 square miles. Drew had no data for areas farther downstream other than that the drainage area of Chattanooga Creek in the vicinity of Broad Street was approximately 72 square miles. At an average cfs flow (based on the data he supplied) of approximately 1.74 cfs per square mile of drainage area, it can be estimated that the average flow of Chattanooga Creek in the area of Broad Street is approximately 125 cfs.

On 9-23-92, CJS and Ferman Miller conducted a brief reconnaissance of the Tennessee Transformer site for the purpose of gathering additional demographic data. It was noted that the Starkey Printing Co. parking lot was both gravel and asphalt while the Tennessee Transformer parking lot was entirely dirt and gravel. It was noted that the closest residence is approximately 100 feet to the east of the site. Industries surrounding the site include Industrial Technologies, the Ben O'Neal Co., Graphic Impressions, K&H Trailer Repair, Nichols Fleet Equipment, Lowrance Electric, the R.B. Poole Co., the Barry Webster Co., Hartford Carpet Mills, Alloway Stamping and Machine Co., Haygood Mobile Equipment Specialist, Mathews Electric Supply, Southern Fluidpower, and Builders Hardware. It was also noted that drainage from the site appeared to be to the south via a storm sewer/surface ditch(concrete lined) that paralleled the railroad track on the west side of the site. It was noted that the abandoned Silk Screen Sign Co.(DSF Master List) is approximately 1 block to the west of the site.

Site No. TND 003328960  
Ref. No. 27

"Rite in the Rain"

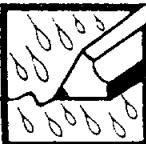


ALL-WEATHER  
**LINE RULE**

Notebook No. 391

Landes Co. #33633
Hamilton Co., Tenn.

"the Rain"  
WRITING PAPER



Division of Superfund

McCallie Ave.

ga, Tenn. 37

6-4-5780

3/19/93 CJS (Craig Stannard)

and Arthur Kolodziejewski (AK) arrive  
at site at 1:20 PM

Weather - overcast, 50°s breezy

Looked at Stainless Bldg. orange

Clay is at one end, nothing else.

Paint

(Shed) 2 5 gall buckets

40' x 40') 1 - 50 gall drum

from last report

Photo #1

Looking east at AK and

South side of Assembly Bldg.

Photo #2 - same as before

Photo #3 soap at southwest  
corner of site.

#4 ~~1:45~~ looking #9 -

south along western side of to R  
site.

#9 -

#10 -

#5 looking ~~east~~ east

along north side of Assembly

Bldg. drainage ditch leading

east from loading dock

ditch is 10' wide + 4' deep.

#11, 12

(20)

and

#6 - looking east at stanchions

Photo

Bldg.

easte

#7 - saw shed (looking north)

3 feet

\* some chert + gravel on surface

#17,

#8 Looking west at Pan Bldg.  
(1:55 PM)

and sea

- T. 45 looking  
 long western side of #9 - looking at Ak next  
to concrete debris piles  
 long ~~area~~ east #10 - looking east along  
center of site (ditch incen-  
 site of Assembly #11, 12, 13, 14 - scrap wood,  
 large ditch leading (20) 55 gal drums with scrap,  
 loading dock and fiberglass beams.  
 10' wide + 4' deep  
 looking east at stables Photo #15, 16 ditch at  
eastern end of site - water is  
3 feet wide, 2" to 3" deep  
 shed (looking north)  
 + gravel on surface #17, 18 Saw shed, I-beams,  
west at Pan Bldg. and scaffolding

Concrete Form February  
4 (Construction Chemawa)

To

Photo #19 - Drums at  
west end of  
shed (4) 4-4  
1 partially full

Various trash drums in  
shed (10 or so)

#20 - Looking west  
along Harbor Ave.

#21 - The Pan Blag.

#22 - The main Assembly Blag  
2:30 pm.

Chain link fence with barbed  
wire on top. Gates open

Locality: Four Residential  
Buildings, Lawrence

Formed by - signs on houses  
near sawmill.

- 119 - houses at

west end of

St. St. (4 or 5)

partially built

470 \$0

400 \$12

28 miles

(S3-D5-Z3)

Four houses in  
one street in  
Larchie.  
Size (8 or 10)

Wester - pretty closely > gentle  
G. G. Wright

Highway Dept.  
Brother Ave.

Second story 4th Street east side  
the Pan Bldg.

Formed by 3 or 4 houses  
main Assembly Stly

Formed by 3 or 4 houses  
in one with barked  
at center open

Formed by 3 or 4 houses  
in concrete

1:00 AM CISL PST arrived

with

Photo #1 and 2 wirehouse on

South west corner of property

10' above ground level

[ ]

#3 band & clay no variation

[ ]

#4 looking south east  
Wirehouse

[ ]

[ ]

Kaytor 10 (filterbar)

Rope marker

From right to left

(polyethylene plastic film)

#10 - 10' long well  
about 10' thick

[box]  
[box]

Well approx. exactly 10'

50' from wellhead  
and [ ]

#6 - WSE + westward

TS and WSE

#7 - about 10' below #6  
Left side at 3:20 PM  
Ruler

#8 - forming a bay

#9 - continuing westward

WSE at top  
Ruler

#10 - about 10'  
along path

Site No. TND 003328960  
Ref. No. 28  
(see Appendix C)

Site No. TND 003328960  
Ref. No. 29

## TRIP REPORT

Site #33-633

Date: **March 19, 1993 and April 7, 1993**

Inspector: **Craig Stannard (CJS)**

Owner / Facility: **Robert Brown**

Type Facility: **Formerly a concrete form and scaffolding manufacturer and renter; currently, a site for the storage of industrial foam scraps**

County: **Hamilton**

City: **Chattanooga**

Purpose of Visit: **Site reconnaissance**

Individuals Contacted: **None**

Other DSF Personnel Present: **Artur Kolodziejski (AK), Wayne Everett (WSE)**

Other Personnel Present: **None**

Weather Conditions: **On 3/19/93 - overcast, breezy, 50s and on 4/7/93 - partly cloudy, gentle breeze, 60s**

Samples Collected:      None  Water  Soil  Split

Photos Taken:      Yes

### Comments and Discussion:

CJS telephoned Mr. Wright Tisdale, attorney for the FMC Acquisition Corporation (the presumed owner of the site at this time), on the morning of March 19, 1993 to notify him of the CFO's intended visit to the Landes Company site at 314 Hooker Rd. in Chattanooga. Mr. Tisdale was not in but a message was left with his secretary.

CJS and AK arrived at the Landes Company site at 1:20 PM on 3/19/93 to conduct a site reconnaissance for the PA report (see Site Sketch and Topographic Map). A second visit was made to the site, this time with Wayne Everett, on 4/7/93, to gain additional information. The following observations were made.

The site covers approximately 17 acres in the Piney Woods area of Chattanooga and is basically flat. There are 6 industrial buildings and 2 trailers on the site. The building listed as #1 on the Site Sketch was once known as the "stainless building". It is currently empty inside with the exception of a pile of red clay at the east end.

The building listed as #2 on the Site Sketch was once known as the "assembly building". This building is currently being used to store foam rubber scraps. There were two vehicles parked outside indicating that there may be two workers involved in the current activities. A truck and rail loading dock is located at the northwest corner of the assembly building. A grass-lined drainage ditch, 10 feet wide and 4 feet deep, runs along the north side of the assembly building. This ditch starts at the loading dock and heads east, emptying into a small stream (a tributary to Chattanooga Creek) that crosses the site at its eastern end. The ditch had some water in it which appeared to be clear. A railroad track parallels the ditch and the north side of the assembly building and crosses the site in an east-west direction.

The building listed as #6 on the Site Sketch is currently empty except for two small piles of sand and clay and a room full of fiberglass insulation products and boxes of polyethylene sheeting. A large (150 foot by 30 foot by 15 feet) pile of unknown waste (reportedly coal, coke and/or tar material) lies just off of the Landes site to the north of this building.

Most of the site is enclosed with a tall, chain-link, barbed-wire fence. The fence has several large holes in it along the southern side of the site which could permit human access. There are two gated entrances along Hooker Road which provide access to the site. The gates are open during the daytime and the site is not guarded.

The building listed as #3 on the Site Sketch was a former paint shed. This concrete floored building is empty with the exception of two 5-gallon buckets and one 50-gallon drum. The buckets are half full with dry yellow paint and the drum is labelled "lemon disinfectant". Building #3 has a small storage shed attached to it on the east side. This addition contains 4 drums (emergency overpacks) left there by Ferguson Harbor Service, Inc. (the State's Superfund contractor) during a partial cleanup at the site in 1991.

Most of the site is bare ground. Heavily traveled areas around the main buildings are sparsely vegetated with grass and weeds. The grass and weeds are heavier in less traveled areas. The natural soil at the site appears to be a cherty red clay. The driveway into the site is gravel covered and the area immediately to the west of the assembly building (area between buildings #2 and #6 on the Site Sketch) is surfaced in concrete. A shallow drainage ditch skirts the site just outside of the fence along the southern side. This ditch receives runoff from industrial properties to the west such as Velsicol and Chattanooga Coke as well as from the Landes site itself. This ditch empties into the small stream that crosses the eastern side of the site.

The building listed as #4 on the Site Sketch was once known as the "pan building". It is a large quonset-like structure. This building was locked and was not entered. The pan building was reportedly once used to store latex sludge.

The building listed as #5 on the Site Sketch was once known as the "saw shed". It is currently being used to store lumber, metal scaffolding and I-beams. There are several (approximately 10) 55-gallon steel drums

present at the eastern end of the shed. Some of the drums are filled or partially filled with oil. Most of them contain scrap metal and trash. There are about four drums along the western end of the shed which may have industrial chemicals in them. One drum is labelled "concrete form releasant" and appears to be full. The others appear to be empty or almost empty.

One of the two trailers at the northeast corner of the site is currently being used to run a small business on the site known as Formco of Tennessee. This business is involved in the rental of concrete forms and supplies (those in the shed) but is a much smaller operation than was once active at the site. There appear to be at least two individuals at this business (two cars outside). There are scrap piles behind the trailers consisting of old boards and pallets, old fiberglass bins stacked up in rows, and assorted scrap metal, I-beams, scaffolding, and construction debris. The other trailer appears to be used as a dwelling.

There are at least 4, and possibly 5, monitoring wells on the site. One of the wells is located on the south side of the assembly building, is flush with the driveway, and S-5 is inscribed on the brass cap. The other wells stick up approximately 2 and 1/2 feet above the site.

The small creek located at the eastern end of the site is approximately 2 to 3 inches deep and 3 feet wide. The eastern portion of the site is densely vegetated with bushes and trees. Storm drains were noted throughout the site which conduct runoff from the site and areas to the west of the site into the creek at the site's east end. Concrete debris and scrap metal debris was noted in a shallow drainage swale near the center of the site.

The southeastern portion of the site (approximately 3 acres) is outside of the fenced area and is adjacent to a wetlands area that lies just to the south. This area is easily accessible by local residents. A railroad track (serving Velsicol and Chattanooga Coke) lies along the southern fence line of the site.

The southeastern portion of the site is littered with garbage, piles of foundry sand and slag, and industrial debris. One label in the debris read FMC Construction Company.

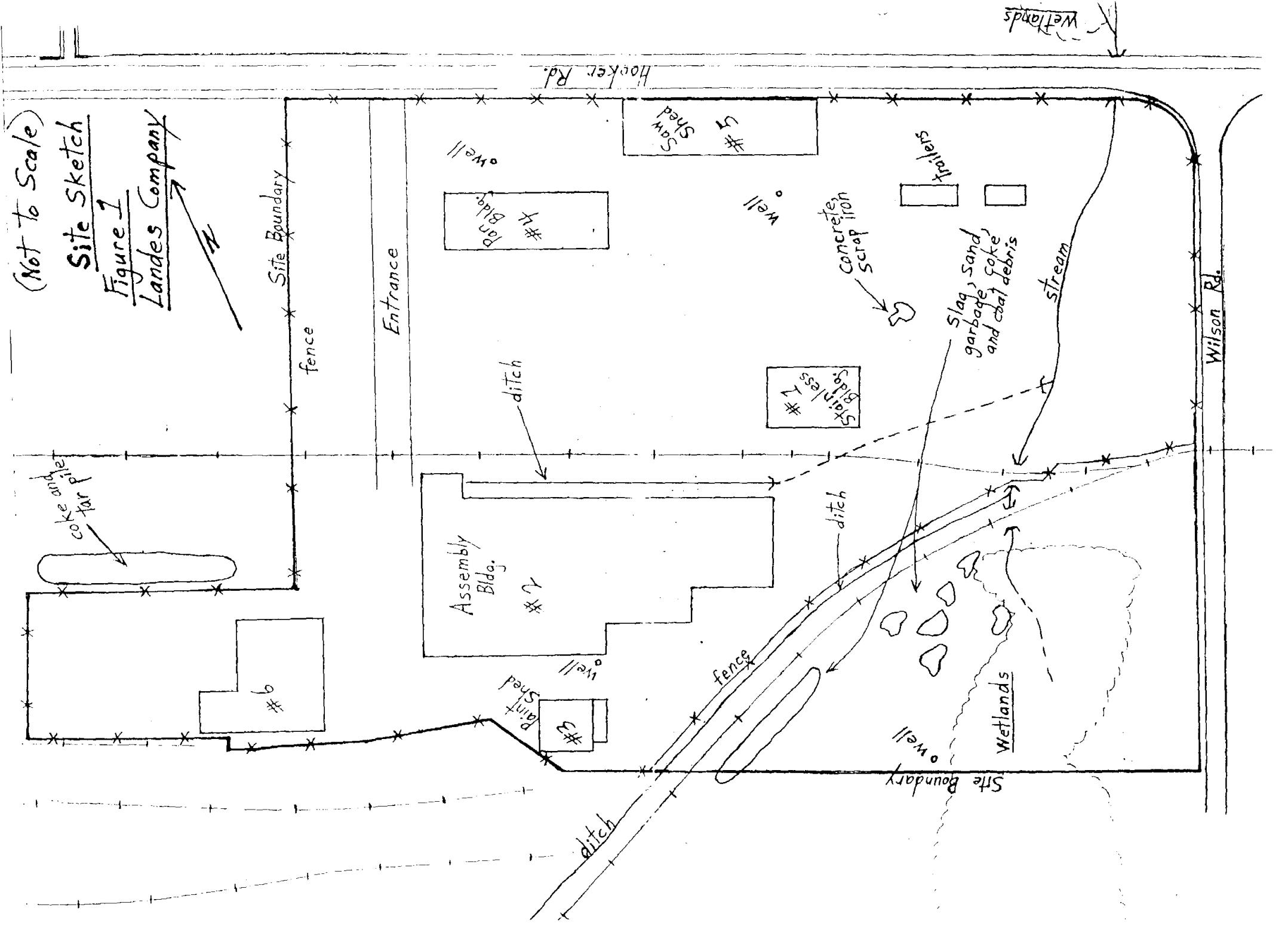
Of special note is the fact that Wright Tisdale telephoned the TDSF office and spoke with CJS on 4/7/93 and explained that FMC Acquisition Corporation went bankrupt in 1991 and sold the site to Robert Brown. Wayne Everett confirmed this information after visiting the Hamilton County Courthouse on 4/8/93 and examining the records in the tax assessors office. Robert Brown currently owns the site and he is associated with the Investment Property Co.

---

Inspector's Signature, date

(Not to Scale)

Site Sketch  
Figure 1  
Landes Company



Site No. TND 003328960  
Ref. No. 30

Date: April 14, 1993  
To: Landes Co. File #33-633  
From: Craig Stannard, Geologist, CFO  
Subject: Public Drinking Water, Chattanooga Area

On April 14, 1993, Gary Burris of the Tennessee Division of Drinking Water Supply, informed Craig Stannard that the entire Chattanooga area and surrounding suburbs are supplied drinking water by the Tennessee American Water Company on Amnicola Blvd. The attached form lists the essential data concerning this utility system.

## PUBLIC WATER SYSTEM DATA

Key Identification Number

0000107

Name of Water System

TENNESSEE - AMERICAN WATER COMPANY

Billing Address

1101 BROAD STREET

City CHATTANOOGA

County HAMILTON

Zip Code 37402

Office Phone 755-7600

Plant Phone

Title of Person	Time	Certification	Interviewed	Correspondence
VICE PRESIDENT	RICHARD SULLIVAN			X
OPERATIONS MANAGER	BILL HOBBS (755-7609)			cc
PRODUCTION SUPT.	DAVE SNYDER (# 1515)	F-4/D-3	X	cc
DISTRIBUTION SUPT.	CHARLIE DOWDY			
WATER QUALITY SUPT.	SUSAN HOLMES (755-7649 LAB)		X	

Source	USGS Map 105 SE	INTAKE LOCATION			MARK ONE ONLY	TREATMENT											
		LATITUDE	LONGITUDE	River Mile		PURCHASE	AERATION	PRECHLORINATION	COAGULATION	SEDIMENTATION	FILTRATION	CORROSION CONTROL	SOFTENING	TASTE AND ODOR CONTROL	IRON REMOVAL	FLUORIDE ADJUSTMENT	DISINFECTION
No.		Name	DEG MIN SEC														
1	R	TENNESSEE RIVER	35 03 12 X			X	X	X	X				X		X	X	
	A		85 17 21														
2	R																
	A																
3	R																
	A																
4	R																
	A																

Name of Systems served by this System	Other Systems Connected to this System
EASTSIDE U.D.	CATOOSA U.D. (GEORGIA)
FT. OGLETHORPE W.S. (GEORGIA)	
HIXSON U.D.	
SIGNAL MTN W.S.	
WALKER CO. U.D. (GEORGIA)	

Plant Classification	F-4	Date Laboratory Certified	
Distribution Classification	D-2		
Design Capacity	50,000 (gpm)	Filter Area	(sq. ft.) Filter Rate < 2.0 MIXED MEDIA (gpm/ft. <sup>2</sup> )
Raw Water Pump Capacity	75,000 (gpm)	Finished Water Pump Capacity	58,330 (gpm)
Distribution Storage, Gravity Flow	19.4 (million gallons)	Emergency Power Only	3 DIESEL PUMPS (gall/day)
Clearwell Capacity	5.38 (million gallons)	Date Cross Connection Control Program Approved	5-23-72
Date of Last Inorganic Chemical Analysis	4-21-89	Date of Last Organic Chemical Analysis	4-6-89
Date of Last Radionuclide Analysis	10-16-89	Date Emergency Plan Approved	10-31-89
Number of Wholesale Customers	6	Number of Meters	177,855
Remarks:	VOCs SODIUM, Corr. ALL 1-25-90 OK F.O. = -1.5	* TOTAL CUSTOMERS:	5,027 IN GA 60,602 IN TN 65,629
			5-16-90

Date of Survey	Number of Connections	Household Factor	Population Served	Average Daily Pumpage (million gallons)	Maximum Day Pumpage (million gallons)	Engineer	Rating	Year
								1994
								1993
								1992
								1991
5-16-90	60602	2.71	164,282	36.52	43.31	MTD	99	1990
5-18-88	65368	2.71	177,147	35.54	44.60	MTD	96	1988

Site No. TND 003328960  
Ref. No. 31

Date: April 15, 1993  
To: Landes Co. File #33-633  
From: Craig Stannard, Geologist, CFO  
Subject: Chattanooga Creek

On April 15, 1993, Joe Hartman with the Tennessee Division of Water Pollution Control (TDWPC), stated to Craig Stannard that the TDWPC had actual photographic evidence that people fish in Chattanooga Creek. He also stated that he has personally witnessed people fishing in the creek.

Site No. TND 003328960  
Ref. No. 32

1. ID NO: <u>TND 00-332-8960</u>	NAME: <u>Concrete Forms Corporation</u>	WATER USE: <input type="checkbox"/>	
ADDRESS: <u>314 Hooker Rd.</u>		Major <input type="checkbox"/>	
<u>Chattanooga, TN 37410</u>		Non-Haz. Job <input checked="" type="checkbox"/>	
2. PROGRAM: Hazardous Waste <input checked="" type="checkbox"/> Solid Waste <input type="checkbox"/>	ENTRY TYPE: New <input checked="" type="checkbox"/> Update <input type="checkbox"/>		
3. DATE OF INITIAL EVALUATION:			
TYPE OF EVALUATION			
4. EVALUATION INSPECTION <u>3/11/85</u>	A. FULL CHECKLIST	3. HW TSDF <input type="checkbox"/> 6. SW Processing Facility <input type="checkbox"/> 1. HW Gen <input type="checkbox"/> 4. HW SQ Gen <input checked="" type="checkbox"/> 7. SW Landfill <input type="checkbox"/> 2. HW Trans <input type="checkbox"/> 5. HW Non-Reso <input type="checkbox"/>	
	B. OTHER	1. Partial Checklist <input type="checkbox"/> 5. Part A Modification/Withdrawal Eval <input type="checkbox"/> 2. CL Eval <input type="checkbox"/> 6. Complaint Follow-up NOS <input type="checkbox"/> 3. P-CL Eval <input type="checkbox"/> 7. Emergency Response <input type="checkbox"/> 4. Special Waste Evaluation <input type="checkbox"/> 8. Other <input type="checkbox"/>	
	5. SAMPLING INSPECTION <u>/ /</u>	1. Generated Waste <input type="checkbox"/> 3. Soil/Sediment <input type="checkbox"/> 5. Ground Water <input type="checkbox"/> 2. Received Waste <input type="checkbox"/> 4. Surface water/Leachate <input type="checkbox"/> 6. Ambient Air <input type="checkbox"/>	
		6. SPECIAL INSPECTION <u>/ /</u>	1. Groundwater Monitoring <input type="checkbox"/> 2. Other (describe in comments) <input type="checkbox"/>
			1. Closure/Post Closure Cost Estimates <input type="checkbox"/> 7. Manifest Reports <input type="checkbox"/> 2. Closure/Post Closure Plans <input type="checkbox"/> 8. Manifest Records <input type="checkbox"/> 3. Financial Instruments <input type="checkbox"/> 9. OEM Data <input type="checkbox"/> 4. Other Required TSDF Plans <input type="checkbox"/> 10. OEM Plans <input type="checkbox"/> 5. Special Waste Requirements <input type="checkbox"/> 11. Other <input type="checkbox"/> 6. Landfill Planning Annual Report <input type="checkbox"/>
	7. RECORDS/REPORT REVIEW (Non-permitting) <u>/ /</u>	1. With Field Office Personnel Only <input type="checkbox"/> 2. With Central Office Personnel <input type="checkbox"/>	
		1. Oral Complaint <input type="checkbox"/> 3. Emergency Response Call <input type="checkbox"/> 2. Written Complaint <input type="checkbox"/> 4. Other (describe) <input type="checkbox"/>	
	8. FOLLOW-UP INSPECTION <u>/ /</u>	1. Facility Status, Evaluation, Meetings/Letters <input type="checkbox"/> 2. Other (describe in comments) <input type="checkbox"/>	
		1. VIOLATION CODES: None <input checked="" type="checkbox"/>	
11. ENFORCEMENT ACTIONS:	Date Action Taken	Sched Comp Date	Actual Comp Date
Warning Letter	<u>/ /</u>	<u>/ /</u>	<u>/ /</u>
Notice of Non-Compliance	<u>/ /</u>	<u>/ /</u>	<u>/ /</u>
Compliance Review Meeting	<u>/ /</u>	<u>/ /</u>	<u>/ /</u>
Referred to Enforcement Section	<u>/ /</u>		

COMMENTS: (continue on reverse if necessary)

No violations were observed.

14. Prepared by:

Burl H. Maupin

DLM:LC

Date:

Field Office:

081

3/14/85

105

Site No. TND 003328960  
Ref. No. 33

TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT  
OFFICE CORRESPONDENCE

DATE: January 28, 1991

TO: Bob Vaughn, Chief, Enforcement, DSWM, Nashville  
*DSW*

FROM: Guy M. Moose, DSWM, Chattanooga  
*GMM*

SUBJECT: Enforcement Action Request File (Referral)  
Landes Company, Inc.  
NNF-33-105-0123

This memorandum is submitted to request enforcement assistance for the aforementioned facility.

Listed below are the violations for which enforcement action is warranted:

Rule 1200-1-111-.07(1)(b)1 Disposing of a hazardous  
Code (3510) waste without a permit or  
Class A\* interim status.

Rule 1200-1-11-.07.03(1)(b) Failure to make a hazardous waste determination  
Code (010)  
Class C

## I. SUMMARY:

In response to a complaint filed with the Chattanooga Field Office alleging improper disposal of paints, thinners and lead shot blast balls, a site investigation ensued on June 14, 1990.

Observations during our site investigation revealed an illegal waste disposal site waste pile within the vicinity of the Landes sand blasting rig.

On October 15, 1990, the DSWM collected samples from the waste piles at the Landes Company. Analytical results revealed the foundry sand/baghouse dust to be a hazardous waste for the characteristic of lead (D008).

- On January 14, 1991, the Landes Company was issued a Notice of Violation citing violation of Rule 1200-1-11-.07(1)(b)1 for disposing of a hazardous waste on site without a permit or interim status.

## II. PREVIOUS COMPLIANCE HISTORY:

Notice of Violation issued June 18, 1991, for failing to make a hazardous waste determination as defined by Rule 1200-1-11-.03(1)(b).

Compliance achieved on August 29, 1990.

III. GENERAL INFORMATION:

Facility Location:

Landes Company, Inc.  
314 Hooker Road  
Chattanooga, Tennessee 37410  
NNF-33-105-0123

Facility Mailing Address:

Landes Company, Inc.  
314 Hooker Road  
Chattanooga, Tennessee 37410

Primary Contacts:

Russell W. Landes, President  
Landes Company, Inc.  
314 Hooker Road  
Chattanooga, Tennessee 37410  
(615) 821-6013

DSWM Personnel Involved:

Jim Childress, DSWM, Chattanooga  
David Smith, DSWM, Chattanooga

Environmental Harm:

Test results show elevated E. P. Toxicity levels for Lead (D008)  
Environmental harm has not yet been established.

Results Requested:

Commissioners Order

Priority:

Medium, 6

GMM/31030028

Site No. TND 003328960  
Ref. No. 34

33-374

## TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

DATE: February 1, 1991

TO: DSWM Files, Chattanooga Field Office

FROM: *[Signature]*  
David Smith, Geologist, DSWM

SUBJECT: Landes Corp. Site Sampling

FROM	TO	DATE

On October 15, 1990 at 1215 hours, DSWM staff geologist arrived at Landes Corp. to take samples from the sand blasting yard on the east side of the property.

I contacted three (3) workers about a key to the gate leading into the site in question. I was given the key and told who to return it to. Except for these contract workers, no one else was on the site.

The samples that were taken were not split with the company because no one was there to represent them. Three samples were taken at this time; two of these from the slag pile and one from the sand piles. All were composite samples.

DS/31010032

FROM	DATE
TO	

Site No. TND 003328960  
Ref. No. 35

## TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

DATE: June 19, 1991  
TO: Bob Vaughan, Chief, Enforcement, DSWM, Nashville  
FROM: *Guy M. Moose*, Guy M. Moose, DSWM, Nashville  
SUBJECT: Landes Company  
Enforcement Action Request File (Addendum)  
NNF-33-105-0123

On June 7, 1991, additional hazardous waste was observed onsite. A corrosive waste having a pH range of 12.4-13.6. (photographs attached). This site is accessible to the public and therefore in my opinion needs either remediation or the site secured/restricted immediately. Please check with OGC as to the status.

The following is our account of the investigations and observations relative to the additional hazardous waste on the Landes Company property.

On June 7, 1991, 9:30 AM at the request of Stephen Ruff, (1) Channel 12 News reporter, a site investigation ensued on June 7, (2) 1991, 10:00 AM At 10:00 AM Stephen Ruff, Janet Dutto, (3) and Guy Moose rendezvoused at Alton Park Recreation Center on Central Avenue. Stephen Ruff directed the DSWM personnel to the rear of the Landes Company and Chattanooga Coke and Chemical property via Wilson Road and a railroad easement. Mr. Ruff pointed out several areas of concern in the ditch line along the railroad tracks to the rear of the Landes Company and Chattanooga Coke and Chemical. Guy Moose explained to Mr. Ruff that these areas of concern appeared to be products of Chattanooga Coke and Chemical (a Superfund issue), and the Division of Water Pollution. Mr. Ruff was also told that perhaps the mottling in the ditch was a result of different bacteria. Guy Moose explained to Mr. Ruff that the DSWM would document our investigation and refer to DSF and DWP. Mr. Ruff then led DSWM personnel to the Landes Company property where additional illegal waste dumping has occurred since the DSWM site visit of October 15, 1990. Observations revealed the dump to contain some 15-20 fifty-five (55) gallon drums. These drums were either empty or contained what appeared to be non-hazardous debris/material. One fifteen-twenty gallon plastic drum was observed labeled with the words Ammonium Hydroxide, and corrosive material (photographs taken). Stephen Ruff then interviewed Guy Moose for a statement as to our anticipated course of action. Mr. Ruff was informed that the DSWM and DSF would schedule a joint investigation this afternoon, with possibly some preliminary testing, and if necessary contact Hamilton County Emergency Management for assistance. This concluded the interview and all parties left the property.

At 3:30 PM, Guy Moose, Wayne Everett,<sup>(4)</sup> and David Smith<sup>(5)</sup> visited the aforementioned dump site and tested the contents of the plastic drum labeled Ammonium Hydroxide. The contents within the drum tested at 12.4 PH using indicator paper and 13.6 using PH probe meter.

Mr. Wayne Everett stated that since there was only small quantities (5-10gals.) on site and none was presently leaking, the DSF could not classify this situation as an imminent health hazard and therefore could not authorize a state cleanup contractor for assistance. Mr. Everett stated that if the DSWM could get no response then perhaps the DSF could assist in having the hazardous waste/material overpacked and secured on Monday, June 10, 1991.

Upon returning<sup>(6)</sup> to the office at 4:30 PM, Guy Moose telephoned Mr. Rob Strickland<sup>(7)</sup> of Furrow Auction Co., who contracted to have the Landes Company<sup>(8)</sup> cleaned out. Mr. Strickland immediately telephoned a Mr. Bob Turner<sup>(9)</sup> who actually cleaned the Landes Company. In discussing the situation with Mr. Turner through a three way conservation, Mr. Turner stated that he placed nothing on the Landes property and knew nothing of a drum of Ammonium Hydroxide. At 5:10 PM, Guy Moose telephoned the Hamilton County Emergency Response and requested assistance in securing the drum within the Landes Company Facilities fenced-in area. A meeting convened on site at 6:15<sup>(10)</sup> PM with the Hamilton County Emergency Response team and Aubry Rodgers,<sup>(11)</sup> Deputy Fire Chief. Mr. Rodgers stated that they could contain any spills resulting from the drum but could not transport/move the container. Mr. Rodgers stated that they could call an emergency response team (contractor) to overpack and move the drum if the DSWM would authorize and pay for it. Since there are no avenues for such authorization within the DSWM, the Hamilton County Emergency Response team concealed the Ammonium Hydroxide container by placing a 55 gallon drum over it. All parties then left the site at approximately 6:45 PM.

On June 10, 1991, Guy Moose phoned Bob Turner in an attempt to have the corrosive waste moved into the Landes Company's fenced in area. Mr. Turner was out of his office, therefore, a message was left for Mr.<sup>(9)</sup> Turner to telephone Mr. Moose. Guy Moose in turn phoned Bob Vaughan,<sup>(10)</sup> Chief, Enforcement, DSWM, on the appropriate course of action necessary for the site cleanup. Bob Vaughan phoned Joe Sanders, OGC, state attorney<sup>(11)</sup> and discussed the situation. Joe Sanders telephoned Mr. Wright Tisdale<sup>(12)</sup> relative to the corrosive waste on site and cleanup. Joe Sanders telephoned Guy Moose and stated that Mr. Tisdale indicated there would be an effort to have the material cleaned up and secured. Wayne Everett and Guy M. Moose agreed to allow forty-eight hours for Mr. Tisdale's response before proceeding with cleanup through DSF's Emergency Response contractors.

On June 12, 1991, Mr. Bob Turner returned my call and he agreed to come to Chattanooga and move the waste into the Landes Company Facility on the morning of June 13, 1991. Wayne Everett and Guy Moose agreed to wait until Thursday before contacting state contractors. David Smith investigated the site where the ammonium hydroxide was observed on June 7, 1991. Mr. Smith's investigation revealed the drum on-site.

On June 13, 1991, Guy Moose telephoned Mr. Rob Strickland at 9:45 AM. Mr. Strickland stated that Bob Turner had anticipated being at the Landes Company site today, but could not get authorization from Mr. Wright Tisdale. Mr. Strickland stated that messages were left with Mr. Tisdale's secretary concerning the waste issue. Mr. Strickland and Guy Moose (by conference call) telephoned Mr. Tisdale's Knoxville, Tennessee, and North Carolina office and left messages concerning the Landes Company situation. Guy Moose telephoned Mr. Strickland again at 11:45 AM to check on status. Mr. Strickland was out so a message was left for R.S. to contact Guy Moose.

At 2:15 PM Mr. Strickland returned call. Mr. Strickland stated that Mr. Tisdale had still not authorized the moving of the waste. Immediately Guy Moose contacted Wayne Everett, who in turn contacted the DSF, Nashville for an emergency response team (state contractors) to remediate the hazardous material on the Landes Company site.

- (1) Stephen Ruff - Channel 12, News Reporter, Chattanooga, TN
- (2) Janet Dutto - Engineer, DSWM, Chattanooga, TN
- (3) Guy Moose - Regional Director, DSWM, Chattanooga, TN
- (4) Wayne Everett - Manager, DSF, Chattanooga, TN
- (5) David Smith - Geologist, DSWM, Chattanooga, TN
- (6) Rob Strickland - Furrow Auction Co., Knoxville, TN  
Contacted with Bob Turner to clean out  
Landes facility
- (7) Bob Turner - Knoxville, TN - Cleaned out trash and debris  
from Landes Company
- (8) Aubray Rodgers - Deputy, Fire Chief, Chattanooga, TN  
Hamilton County Emergency Management
- (9) Bob Vaughan - Chief of Enforcement, DSWM, Nashville, TN
- (10) Joe Sanders - OGC, Attorney, State of Tennessee
- (11) Wright Tisdale - Attorney for FMC Aquisition Company

FMC Aquisition Company - Owner of Landes Company

GMM/31021168

Site No. TND 003328960  
Ref. No. 36

# TENNESSEE DEPARTMENT OF PUBLIC HEALTH

## OFFICE CORRESPONDENCE

DATE: September 1, 1983

TO: Water Management Files

FROM: Phil Stewart 

SUBJECT: Sewer Connection at Concrete Forms, Inc.

On August 29, 1983, Hal Schook with Concrete Forms, Inc., called and reported that he has completed construction of the sewer line connecting his plant's wastewater discharges to the Chattanooga Sewer system. He stated that the new work had been in service since August 26, and that it was ready for inspection. I told him that we would wait one or two months to allow the area around his plant to dry-up before making the inspection to determine compliance with our earlier directions.

PLS/ak

Site No. TND 003328960  
Ref. No. 37

## TENNESSEE DEPARTMENT OF CONSERVATION

MEMO

DATE: June 28, 1991  
 TO: Phil Stewart  
 FROM: Greg Denton  
 SUBJECT: Chattanooga Creek fish data

Rick - of the  
 Because of sites in the  
 Superfund sites I thought  
 waterished. I might  
 want you to see this.  
 RMS - 2  
 JCN 7/7  
 WSE

On June 27, I received the results of the organic contaminant analyses of fish from Chattanooga Creek. (I had previously received the results from the metals analyses which did not indicate problems for arsenic, cadmium, chromium, copper, lead, and mercury.) Following are certain organic parameter results: (All are composited fillet samples)

TYPE SAMPLE	DIELDRIN	CHLORDANE	PCBS	DDT
Channel catfish	<b>8.184</b>	0.314	<b>1.43</b>	0.636
Largemouth bass	0.086	0.028	0.12	0.051
Common carp.	0.120	<b>0.160</b>	<b>1.14</b>	0.263

The numbers that are bolded are those that exceed FDA Action Levels or trigger points used by the Division. The dieldrin number for the catfish sample seems especially high. (I have a call in to the lab to confirm the value.) If correct, dieldrin level in that sample is 27 times the FDA level (0.3 ppm). Chlordane and PCBs also appear high.

While Chattanooga Creek is already posted, according to Dale Rector who collected the samples, there is an encampment of homeless people in this area of the creek and Dale saw them fishing. It is possible that we need to recon this area again and determine the need to take additional measures such as posting more signs, or talking to fishermen about the hazards of consuming these fish, or collecting more fish. Please advise.

cc. Garland Wiggins

Site No. TND 003328960  
Ref. No. 38

CFO File copy  
Landes Co # 33633

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DIVISION OF WATER POLLUTION CONTROL  
OFFICE MEMORANDUM

Date: April 29, 1992

To: The Files

From: RS for Joe Hartman

Subject: FMC Acquisition Corporation  
formerly The Landes Company  
formerly CFC Fabrication Corporation  
formerly Concrete Forms Corporation  
304 Hooker Road  
Chattanooga, Tennessee 37410

On February 26, 1992, Phil Stewart and Joe Hartman inspected the site on Hooker Road at Wilson Road now owned by FMC Acquisition Corporation, Hal C. Shook, President. All the former activity at the site, i.e. manufacture and rental of concrete forms, has ceased, and all equipment removed. The only activity currently at the site is warehousing, with Woodbridge Foam Fabricating, Inc., storing foam rubber scraps, and Hydro-Vac Services storing a latex sludge material. All the materials being stored were inside large buildings and were having no current effect on water draining through the site. However, there was evidence that some latex sludge wastewater had discharged to the storm drainage system from the building nearest Hooker Road; when the material was first dumped in the building. The Division of Solid Waste Management has ordered Hydro-Vac to remove the material from the site by April 28, 1992.

The report entitled "The Environmental Quality of Chattanooga Creek," prepared for EPA by Dynamac Corporation, describes a small pipe discharging water to the drainage ditch at the culvert near the intersection of Hooker Road and Wilson Road. However, this pipe could not be located during the inspection. A return visit to the site will be made in an attempt to locate the pipe, possibly with the help of Dynamac personnel.

On April 9, 1992, Joe Hartman and Jill Davis stopped by the site and located a semi-active dump site at the rear of the property. The dump can be reached by car by following the railroad track from Wilson Road.

Maps are attached.

JDH/36062119

Attachments

cc: Division of Solid Waste Management  
~~cc:~~ Division of Super Fund

Site No. TND 003328960  
Ref. No. 39

Report on

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# **MORNINGSIDE CHEMICAL COMPANY**

## **TRENCH INVESTIGATION**

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Prepared for

**Tennessee Department  
of Health and Environment**

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Submitted by

**Tricil Environmental  
Management Inc.**

---

Date

**NOVEMBER 1989**

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89-21

SITE INVESTIGATION

BORING NO. MNSMW-1 (10F2)

MORNINGSIDE CHEMICAL

ACCOUNT NO.

202 HOOKER ROAD

ELEVATION 98.8

DATE 9-12-89

WEATHER P.CLOUDY, 85°

LEVEL 95.49

AT COMPLETION  
10/13 11:13 AM

FIELD ENGINEER MICHAEL MATTHEWS

LEVEL 96.38

AT 2 FEET

DRILLER TRI-STATE, D. JONES

Sample Depth Feet From To	Stratum Depth Feet From To	Soil Classification	N SPT	W	PPR
	0 1.5'	COKE WASTE			
1.5 3.0		CLAY w/ SHALE +CHERT FRAGMENTS	7-8 9		
3.0 4.5		CLAY w/ SHALE +CHERT (15" RECOVERY)	4-7 11		
4.5 6.0		SAME (14" RECOVERY)	6-17 12		
6.0 7.5		SAME (14" RECOVERY)	7-12 15		
7.5 9.0		SAME	7-10 12		
9.0 - 10.5		SAME w/ RED/WHITE MOTTLING	6-10 13		
10.5 12.0		SAME LESS CHERT & SHALE (21" RECOVERY)	7-10 11		
12.0 13.5		SAME	6-9 11		
13.5 15.0		SAME (20" RECOVERY)	5-6 7		

ELEVATION From BENCHMARK 1, CROSS CUT IN CONCRETE  
LOADING DOCK ELEV 100.00 ASSUMED. SEE NOTE WELL SURVEY



## TEST BORING LOG

## SITE INVESTIGATION

BORING NO. MNS MW-1 (20F2)

## MORNINGSIDE CHEMICAL

ACCOUNT NO.

202 HOOKER ROAD

**ELEVATION**

DATE 9-12-89

WEATHER P. CLOUDY, 85°

LEVEL

AT COMPLETION FIELD ENGINEER MICHAEL MATTHEWS

LEVEL

AT 24 HRS, DRILLER TRI-STATE, D. JONES

Sample Depth Feet From To	Stratum Depth Feet From To	Soil Classification	N	W	PPR
15.0 16.5		SAME	4-6		
			7		
16.5 18.0		SAME w/ 6" LAYER SLIGHTLY SANDY WATER AT 17'	3-4		
			4		
18.0 19.5		MOIST CLAY	1-1		
			2		
19.5 21.0		WET CLAY (6" RECOVERY)	1-1		
			2		
		21.9'			



# TEST BORING LOG

## SITE INVESTIGATION

BORING NO. MNS MW-2

MORNINGSIDE CHEMICAL

ACCOUNT NO.

702 HOOKER ROAD

ELEVATION 928.96.3 DATE 9-13-89 WEATHER Cloudy 80'

EVEL 93.49 AT COMPLETION FIELD ENGINEER MICHAEL MATHEWS

EVEL 94.20 AT 10/13/89 11:26 AM DRILLER TRISTATE D. JONES

Sample Depth Feet From To	Stratum Depth Foot From To	Soil Classification	N SPT	W	PPR
	0 2	TOP SOIL			
2 3.5	.	STIFF MOIST CLAY 15" RECOVERY	2-2 3		
3.5 5	.	MOIST CLAY WITH ORGANIC FRAGMENTS 18" RECOVERY	2-3 5		
5.0 6.5	.	STIFF CLAY WITH SHALE & CHERT FRAGMENTS 19" RECOVERY	4-4 9		
6.5 7	.	WATER @ 6.5' DEP / STIFF CLAY 10" DEP 21" RECOVERY	15		
7.8 9.5	.	STIFF CLAY WITH SHALE 18" RECOVERY	15-15 17		
9.5 - 11	.	CLAY WITH SMALL AMOUNTS OF SHALE 18" RECOVERY	6-6 9		
11 12.5	.	CLAY 18" RECOVERY	4-4 8		
12.5 14	.	CLAY 20" RECOVERY	12-13 11		
14 15	15'	STIFF CLAY Rock @ 15' No RECOVERY	12 - REFUSAL		



## TEST BORING LOG

SITE INVESTIGATIONBORING NO. MNSMW - 3MORNINGSIDE CHEMICALACCOUNT NO.202 HOOKER RDELEVATION 95.0 DATE 9-13/14-89 WEATHER P. CLOUDY 80°LEVEL 92.52 AT COMPLETION FIELD ENGINEER MICHAEL MATHEWSLEVEL 92.74 AT 10/13/89 11:37a DRILLER TRISTATE, D. JONES

Sample Depth Feet From To		Stratum Depth Feet From To	Soil Classification	H	W	PPR
				SPT		
0	1		TOP SOIL			
1	2.5		12"-18" CLAY WITH COKE & VEGETATION 18"-30" CLAY	1-2		
2.5	4		CLAY 6" RECOVERY	1-1		
4	5.5		CLAY WATER @ 4' 10" 17" RECOVERY	1-1		
5.5	7.0		CLAY WIT. SHALE 22" RECOVERY	2-3		
7.0	8.5		SOFT CLAY 22" RECOVERY	2-2		
8.5	10		STIFFER CLAY 15" RECOVERY	4-5		
10	11.5		CLAY - 22" RECOVERY	4-12		
11.5	13		STIFF CLAY 20" RECOVERY	6-10		
13	14.5		STIFF CLAY WITH SHALE 22" RECOVERY	6-8		

DRILLED TO 11.5' ON 9-13. STOPPED DUE TO THUNDER  
 Storm. SAMPLE 11a+b COMPOSITED FROM 1-11.5'. SAMPLE  
 12a+b COMPOSITED FROM 11.5'-16.0'.

**TEST BORING LOG**

Site No. TND 003328960  
Ref. No. 40

---

# **Uncontrolled Hazardous Waste Site Ranking System**

## **A Users Manual (HW-10)**

Originally Published in  
the July 16, 1982, *Federal Register*

United States  
Environmental Protection  
Agency

1984

Site No. TND 003328960  
Ref. No. 41



# TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER  
P. O. BOX 40747  
NASHVILLE, TENNESSEE 37204

December 19, 1985

Mr. Gordon Caruthers  
Solid Waste Management Division  
Department of Health & Environment  
701 Broadway  
Nashville, TN 37219

Dear Gordon:

In response to your call of December 19, I am happy to enclose descriptions of critical wildlife habitat of Tennessee, as designated by the U.S. Fish and Wildlife Service.

Please advise if I can be of further assistance.

Sincerely,

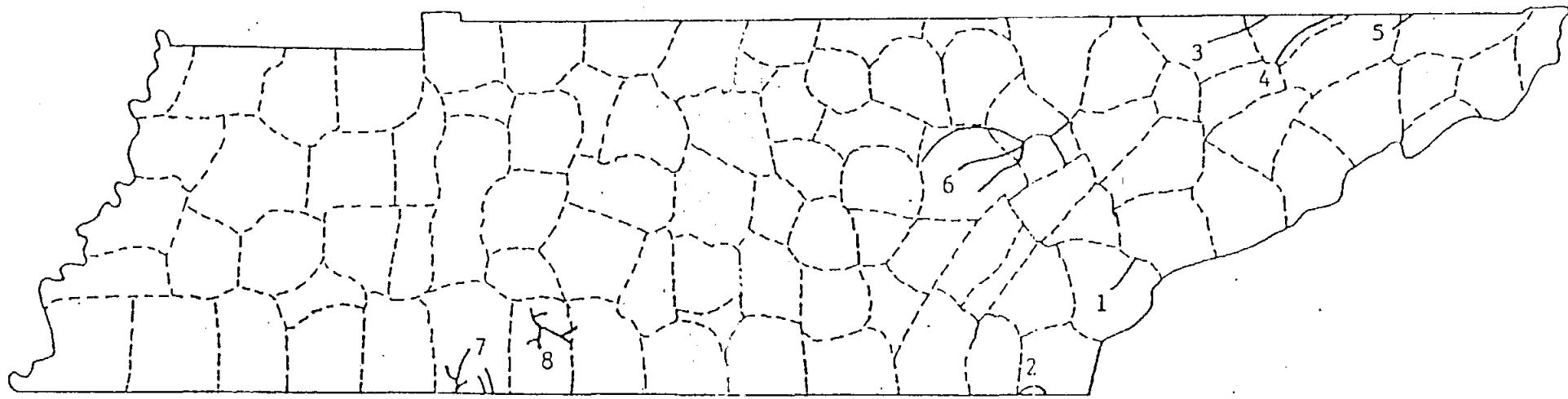
TENNESSEE WILDLIFE RESOURCES AGENCY

A handwritten signature in cursive script, appearing to read "R. M. Hatcher".

Robert M. Hatcher, Coordinator  
Nongame/Endangered Species

RMH/ch  
enc.

OVER-VIEW OF CRITICAL HABITATS  
IN TENNESSEE



1. smokey madtom
2. amber darter, Conasauga logperch, trispot darter
3. yellowfin madtom, slender chub
4. slender chub
5. spotfin chub
6. spotfin chub
7. slackwater darter
8. slackwater darter

Site No. TND 003328960  
Ref. No. 42

DSF

# soil survey of Hamilton County, Tennessee

United States Department of Agriculture  
Conservation Service  
in cooperation with  
Tennessee Agricultural Experiment Station

This soil is used mostly for woodland, hay, and pasture. Some areas are used for urban housing and local commercial districts.

This soil is moderately suited to agricultural use. The very slowly permeable clay subsoil retards root growth and the movement of water and air through the soil. Row crops such as corn and soybeans grow poorly on this soil. Pasture plants, such as common bermudagrass, tall fescue, and serecia lespedeza, grow fairly well.

This soil is moderately suited to use as woodland because of moderate available water capacity and the very slowly permeable clay subsoil. Trees that grow on this soil include loblolly pine and shortleaf pine. The clayey subsoil near the surface causes seedling mortality and limits the use of equipment when the soil is wet.

This soil is poorly suited to most urban uses. The very slow permeability, low strength, and high shrink-swell potential are limitations which are difficult to overcome. Engineering works and highway and street construction are limited by the low strength, high shrink-swell potential, and depth to bedrock of this soil.

This soil is in capability subclass IVe and woodland subclass 4c.

**CcD—Colbert-Rock outcrop complex, 5 to 20 percent slopes.** This map unit consists of small areas of clay and moderately steep, Colbert soils and limestone Rock outcrop so intermingled that they could not be separated at the scale selected for mapping.. Areas of this map unit range from about 3 to 25 acres in size, and individual areas of each component range from 0.1 acre to about 2 acres. Areas of Colbert soils make up from 35 to 70 percent of the map unit and average about 45 percent. Areas of Rock outcrop make up from 30 to 55 percent of the map unit and average about 40 percent.

Colbert soils are deep and moderately well drained. Typically, the surface layer is brown silt loam about 4 inches thick. The subsoil is yellowish brown plastic clay that extends to a depth of 45 inches. It is mottled in shades of brown and gray except in the upper 10 to 15 inches. The underlying material is olive clay which has gray and brown mottles. Limestone bedrock is at a depth of 55 inches.

Colbert soils are low in natural fertility and organic matter content. They range from slightly acid to strongly acid, except in the layers just above bedrock, which range from slightly acid to mildly alkaline. Permeability is very slow, retarding root growth and the movement of water and air through the soil. The available water capacity is only moderate because of the high clay content in the subsoil. The shrink-swell potential is high.

Rock outcrop is limestone bedrock that is exposed on land surface. In places, the rocks are level with the surface, and in other places, the rocks extend 2 to 3 feet above the surface.

Included with this unit in mapping are numerous small areas of a soil which is less than 40 inches deep to bedrock. Also included are a few areas of a soil that is less clayey in the upper part of the subsoil. Included soils make up 10 to 15 percent of the unit.

The soils are used mostly as woodland; in a few areas they are used for unimproved pasture.

These soils are poorly suited to farming, woodland, and most engineering uses. The large number of Rock outcrops is the most limiting feature. Other limiting features are very slow permeability, and the high shrink-swell potential. Some tree species that grow on these soils are hickory, chestnut oak, and eastern redcedar.

This complex is in capability subclass VII. The Colbert soils are in woodland subclass 4c.

**CdC—Colbert-Urban land complex, 2 to 12 percent slopes.** This map unit consists of deep, moderately well drained, gently sloping and sloping Colbert soils, Urban land, and disturbed areas that have been altered during construction. The areas of soils and Urban land are so intricately mixed or so small that they could not be separated at the scale selected for mapping. Areas of this map unit range from about 5 to 150 acres in size, and individual areas of each component range from 0.1 acre to about 5 acres. Colbert soils make up 25 to 45 percent of each mapped area, Urban land 25 to 45 percent, and disturbed areas 10 to 25 percent.

Typically, Colbert soils have a surface layer of brown silt loam 4 inches thick. The subsoil is yellowish brown clay that extends to a depth of 45 inches. It is mottled in shades of brown and gray, except in the upper 10 to 15 inches. The underlying material is olive clay and has gray and brown mottles. Limestone bedrock is at 55 inches.

Colbert soils are low in natural fertility and organic matter content. They are slightly acid to strongly acid, except in the layers just above bedrock, which range to mildly alkaline. Permeability is very slow, and the available water capacity is moderate. The shrink-swell potential is high.

The Urban land part of this unit is covered by buildings, streets, parking lots, sidewalks, and other structures.

The disturbed areas have been excavated during the installation of utilities, and cut and filled during grading and shaping operations. They have been altered to the extent that individual soils cannot be identified and predictions cannot be made about their suitability for use without an onsite investigation.

Included in mapping are small areas of a soil that is less clayey in the upper part of the subsoil and areas of a somewhat poorly drained soil that has gray mottles within 10 inches of the surface layer. The somewhat poorly drained soil is on level areas and slight depressions. Also included are some areas of a Talbott soil that has limestone bedrock within 40 inches of the surface.

HAMILTON COUNTY, TENNESSEE — SHEET NUMBER 65



**Site No. TND 003328960**  
**Ref. No. 43**

**(SEE APPENDIX C)**

**Site No. TND 003328960**  
**Ref. No. 44**

**(SEE APPENDIX C)**

**Site No. TND 003328960**  
**Ref. No. 45**

**(SEE APPENDIX C)**

Site No. TND 003328960  
Ref. No. 46

(SEE APPENDIX C)

**Site No. TND 003328960**  
**Ref. No. 47**

**(SEE APPENDIX C)**

**Site No. TND 003328960**  
**Ref. No. 48**

**(SEE APPENDIX C)**

**Site No. TND 003328960**  
**Ref. No. 49**

**LAWYERS TITLE & ESCROW, INC.**  
**737 Market Street - Suite 400**  
**Chattanooga, Tennessee 37402**  
**(615) 756-4154**

January 10, 1994

Mr. Craig Stannard  
Tennessee Division of Super Fund  
540 McCallie Avenue, Suite 550  
Chattanooga, TN 37406

Dear Mr. Stannard:

As requested by you in our telephone conversation last week, enclosed is a copy of the Tri-State report on the Hooker Road property.

Please call me after you review this report.

Sincerely,

*Robert L. Brown*  
Robert L. Brown  
President

RLB:cwb  
Enclosure

cwb/stannard.ltr

*W.T. Working  
copy -*



## TRI-STATE TESTING & DRILLING

Geotechnical Engineering  
Soil and Materials Testing, and Drilling

### REPORT OF AN ENVIRONMENTAL ASSESSMENT

LANDES COMPANY FACILITIES

314 HOOKER ROAD

CHATTANOOGA, TENNESSEE

Prepared for:

F M C ACQUISITION CORPORATION

TRI-STATE TESTING & DRILLING PROJECT NO.: TS-150  
DECEMBER 1990

2103 Tinsley Place • P.O. Box 72596 • Chattanooga, TN 37407  
(615) 622-1217



## Tri-State Testing & Drilling

December 19, 1990

Project No. TS-150

FMC Acquisition Corporation  
P.O. Box 158  
Knoxville, Tennessee 37901

Attention: Mr. Wright Tisdale

Reference: Report of Environmental Site Assessment  
and Limited Sampling and Testing Program  
Landes Company Facilities  
314 Hooker Road  
Chattanooga, Tennessee

Gentlemen:

Tri-State Testing and Drilling is pleased to submit this report of our Environmental Assessment of the subject site. The purpose of our services was to characterize the general site conditions relative to environmental concerns and to identify potential adverse environmental conditions prior to a change of ownership of the parcel.

This report is intended for the use of the addressee only. The contents should not be relied upon by any party without the express written consent of TRI-STATE TESTING & DRILLING. The findings are based on conditions existing at the time of our site work and should not be relied on to represent conditions at substantially later dates.

Mr. Wright Tisdale  
Environmental Assessment  
Landes Company Facilities  
December 17, 1990  
Page 2

The information contained in the attached report should not be considered a comprehensive assessment of the site, but rather is intended only to identify, if any, obvious and/or significant environmental concerns associated with the migration of contaminants from other lands or with the previous use of the subject parcel. It is recommended that a competent environmental specialist be consulted for review of this report and our findings to recommend any necessary "clean-up" operations, if any, to satisfy local, state, and federal regulations.

Tri-State Testing and Drilling appreciates this opportunity to be of service to the FMC Acquisition Corporation. We trust this report satisfies your immediate needs relative to this project. If you have any questions concerning details of this report we are available to discuss it's contents. If we can be of any further assistance, please contact us at your convenience.

Sincerely,  
TRI-STATE TESTING & DRILLING

*Q.T. Morphis*

Q.T. Morphis  
President

*T.L. Prim*

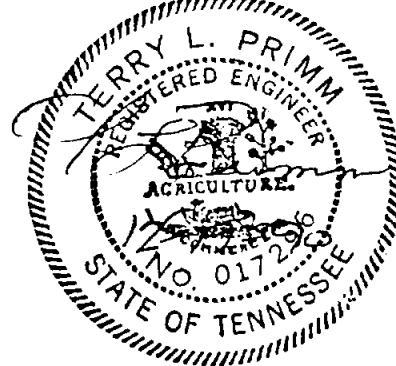
T.L. Prim, P.E.  
Vice President

**REPORT OF  
ENVIRONMENTAL ASSESSMENT**

**LANDES COMPANY FACILITIES  
314 HOOKER ROAD  
CHATTANOOGA, TENNESSEE**

Prepared for:

FMC ACQUISITION CORPORATION



Prepared by:

Tri-State Testing and Drilling  
Geotechnical Engineers and Materials Testing  
Chattanooga, Tennessee

T-S Project No. TS-150  
December 1990

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## APPENDICES

### Appendix Description

- A. Site Plan and Boring Locations
- B. Boring Logs and Well Construction Logs
- C. Soil Quality Results
- D. Water Quality Results

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2	Summary of Soil Boring and Well Construction Data	15
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*supposed to state that  
this is a Phaneff study*

## 1.0 INTRODUCTION

This report presents the findings of an environmental site assessment recently performed for the tract of land owned by the FMC Acquisition Corporation at 314 Hooker Road in Chattanooga, Hamilton County, Tennessee. The work was performed as outlined in our proposal dated September 20, 1990. Our services were authorized by Mr. Wright Tisdale *att'y for* ~~the~~ FMC Acquisition Corporation.

The data presented herein is based on the information obtained during the study. This scope of work may not be adequate to necessarily detect all potential environmental concerns at the site nor answer detailed environmental questions. If additional information becomes available, we request the opportunity to review the information, reassess the site conditions and modify our opinions, if warranted. Our study has not addressed naturally occurring contaminants such as radon, asbestos or heavy metals, nor did it address wetlands, if any.

Mr. Wright Tisdale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
December 19, 1990

The information contained herein should not be considered a comprehensive assessment of the site, but rather is intended only to identify, if any, obvious and/or significant environmental concerns associated with the migration of contaminants from other lands or with the previous use of the subject parcel. It is recommended that a competent environmental specialist be consulted for review of this report and our findings to recommend any necessary "clean-up" operations, if any, to satisfy local, state, and federal regulations.

#### 1.1 PURPOSE and SCOPE

The environmental site assessment is a general characterization of environmental concerns based on observations at the property and surrounding area, interviews, and a review of readily available records compiled by environmental regulators. To meet the objectives of our proposal, our services consisted of the following activities:

- Review of available literature to define the site's regional environmental setting (topography, physiography, geology, hydrogeology);

Mr. Wright T. dale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
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- Review files of record to determine the past occurrence of environmental concerns ( US EPA, Facility Index System (FINDS) and CERCLIS Lists, Tennessee Department of Health and Environment (TDHE), and personal interviews;
- Installation and construction of monitoring wells and the testing of soil and water in areas considered to be most likely candidates for off-site infiltration of pollutants and present/previous on-site contamination, to assess their quality, and assess the site's hydrogeologic characteristics;
- Complete water well usage survey within a 0.25 mile radius to determine the presents, if any, of local ground water users;  
and
- Prepare and submit a report detailing the methods of investigation and the hydrogeologic and analytical findings.

## 1.2 BACKGROUND

The following discussion is based on information obtained from observations during site visits by Mr. T.L. Primmm, P.E., Mr. Robert Bittle, C.P.G., and Mr. Russell Morphis of Tri-State Testing & Drilling from October 1, 1990 through December 14, 1990. Our understanding of the past and present land use has also been interpreted from the following sources:

- Hamilton County Deed & Record Books; Hamilton County Courthouse; Chattanooga, Tennessee;

Mr. Wright T. Dale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
December 19, 1990

- Hamilton County Land Use Tax Map; Hamilton County Courthouse; Chattanooga, Tennessee;
- USGS Topographic Survey of the Fort Oglethorpe 7.5 minute Quadrangle dated 1982.
- Interviews with persons familiar with the site's history.

Regulatory Information and Other Sources

According to Mr. Guy Moose, Regional Director of the TDHE, Department of Solid Waste Management (DSWM), the only information available in the TDHE files relates to a recent Notice of Violation, dated June 18, 1990, of drum storage at the referenced facility and a Notice of Violation, dated September 25, 1990, of an alleged illegal waste pile within the vicinity of the Landes sandblasting rig. No other information regarding environmental concerns associated with the subject property was recorded in their files. Further, we conducted a file search under the former owners (see Table 1) of the property in the TDHE, DSWM files and no information concerning pollutants was recorded.

*what has  
happened  
with respect  
to these matters*

Review of the U.S. EPA FINDS Report (i.e., a list of sites and facilities subject to EPA regulations) and the CERCLIS list indicates the site is not listed on either of the above referenced documents.

Mr. Wright T dale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
December 19, 1990

Mr. Phil Stewart, TDHE Director of Waste Pollution Control (WPC) and Mr. Terry Whalen, employee with TDHE, Division of Ground Water Protection (DGWP) in Chattanooga, Tennessee, told us that they had no knowledge of environmentally related problems at the subject property.

TABLE 1

Chain of Property Ownership

F M C Acquisition Corporation

Landes Company, Inc.

C F C Fabrication Corporation

Concrete Forms Corporation

Estelle Reynolds Tipton, Mercer Reynolds, Jr. Jack  
Reynolds & Bill Reynolds

K. C. Fitschen

Upon review of the available literature of the TDHE Underground Storage Tanks, there are no known buried underground storage tanks listed on the subject property.

Mr. Wright T dale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
December 19, 1990

*We own the  
transformers*

Personnel of operations with the Electric Power Board of Chattanooga, informed us that they did not know whether or not the transformers located on the subject property contained PCBs. He told us that the only way to confirm one way or the other was to test each individual transformer. Fifteen pole-mounted transformers are located on, or adjacent to, the subject property. During our site visits we observed no evidence of staining or leaking in the vicinity of the transformers, except for minor staining of the transformers located near the entrance road to the facility and Hooker Road and a single mounted transformer adjacent to the main building across the railway spur.

The city of Chattanooga Fire Department was also called to check for any fires and/or emergency responses associated with the subject property. According to their records, no chemically or environmentally related responses were responded to by the department.

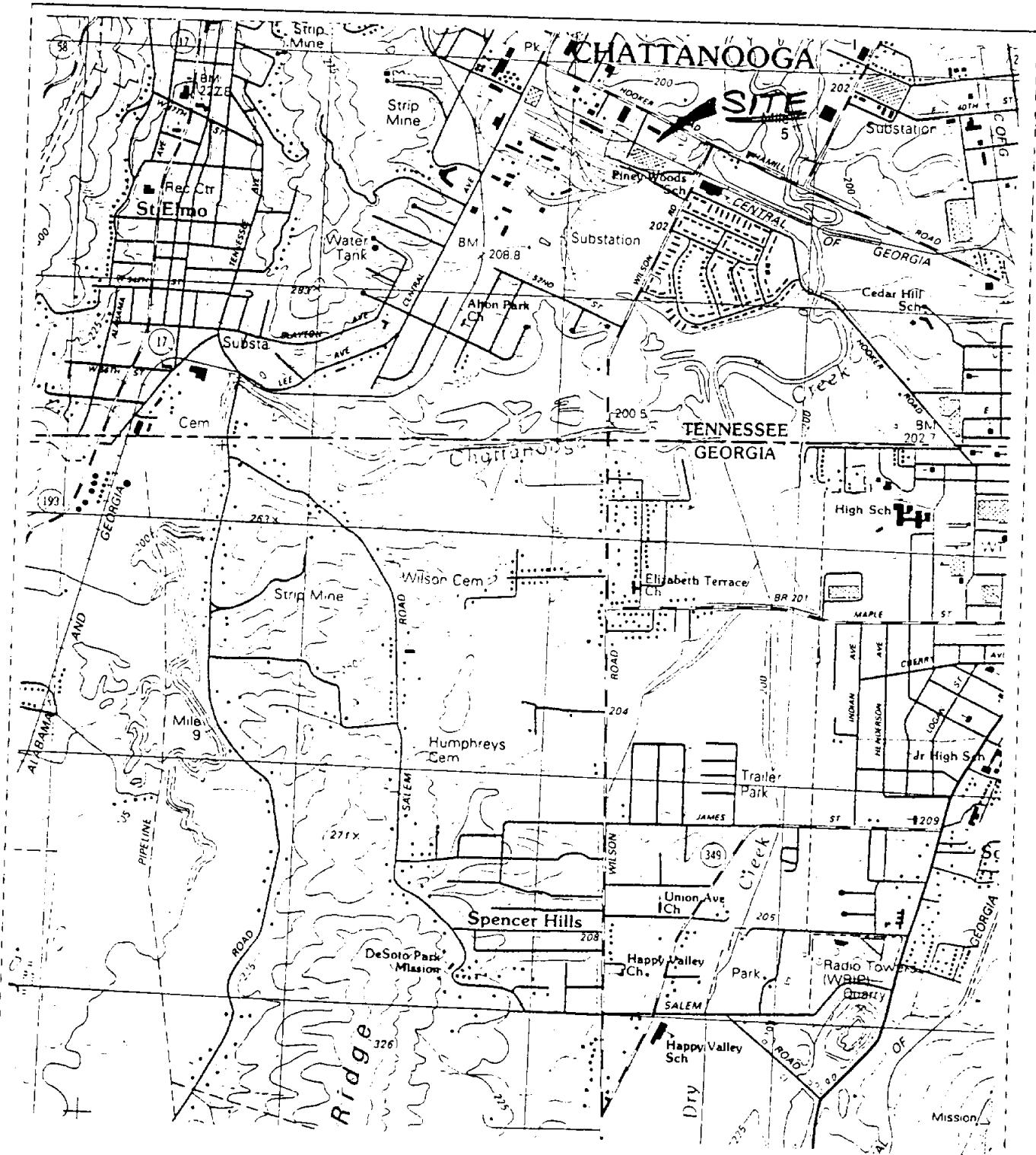
Mr. Wright T dale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
December 19, 1990

## 2.0 LOCATION and DESCRIPTION

### 2.1 Location and Description of Property

The referenced site is located southwest of the intersection of Hooker Road and Wilson Road within the city limits of Chattanooga, Hamilton County, Tennessee, as shown on Figure 1. The site is Bound on the north by Hooker Road, on the east by Wilson Road, on the west by parcels owned by S M C Industries, Mid South Saw and Grinding, and the Chattanooga Coke and Chemical Corporation. The site is bound on the south by a parcel owned by Velsicol Chemical Corporation. The southeastern portion of the site is bisected by the Central of Georgia Railway Company line with a spur existing in the central portion of the site.

At the time of our study, five (5) primary buildings constructed of a combination of steel framing and masonry existed at the site. The largest of the structures, located between the railroad line, most recently was utilized for office space on the western end of the building with the remaining portion of the building utilized for processing and fabrication of steel forms and tubular frames, including welding, machining operations, paint baths, etc. The



LOCATION MAP

Detailed from:

TVM/USGS 7.5 min. Quadrangle  
Fort Oglethorpe, Ga.-Tenn.  
1982 Edition

Scale 1" - 2000'

FIGURE 1

Mr. Wright T. Dale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
December 19, 1990

remaining buildings were typically used as support facilities for the overflow of products and/or special projects. It is our understanding that the main building was converted from a cotton gin in the 1960's. Adjacent to the Metal fabrication building located east of the entrance drive in the Northern portion of the referenced parcel, an underground tank of "form oil" was observed. Most of the surface areas around the buildings across the site, north of the railway line, have been covered with crushed stone or provided with a concrete slab for access and parking. The drive into the facility is asphaltic concrete. The remaining areas north of the railway line and east of the buildings are generally grass covered with eastern most portion of the this area being wooded with hardwoods, native grasses, weeds, and briars.

South of the Central of Georgia Railway line the parcel was occupied by equipment formerly used to perform sandblasting operations. The sandblasting operations apparently covered a surface area of less than one (1) acre evidenced by sparse grass cover and surface sands. Just east of this area, a small pile of furnace slag type material was observed. At the southern property line and adjacent to the

Mr. Wright T dale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
December 19, 1990

*are there  
still there*

railway line a large slag pile was observed. During our site reconnaissance, partially covered 55-gallon drums were found along the southern property line, as shown on the plan in Appendix A. The remaining areas east of the above mentioned blaster and drums is wooded with young hardwoods and pines with native grasses and weeds, and briars. No distressed vegetation was noticed in these areas of the site.

## 2.2 TOPOGRAPHY and PHYSIOGRAPHY

The site is located in the Lookout Valley, which is within the Tennessee Valley and Ridge physiographic province of the middle southeastern United States, along the southern edge of Tennessee. The valley consists of northeast trending ridges with elevations of 700-800 feet above mean sea level (MSL) extending from the valley floor, which is at an elevation of about 650 feet above MSL. The valley is bound to the west by Lookout and Raccoon Mountains of the Appalachian Plateau, and to the east by Missionary Ridge, with average altitudes of 2,000 and 1,000 feet above MSL, respectively.

Mr. Wright T. Dale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
December 19, 1990

According to our interpretation of the Fort Oglethorpe USGS Quadrangle map, the site drainage is multi-directional and is primarily directed toward the northwest. The site is relatively level and is bisected by a drainage ditch along the railroad line through the eastern portion of the parcel. Consequently, surface drainage of the south and western portion of the tract generally travels in a northeastern direction to the drainage ditch. Topographic relief across the parcel is less than ten feet. We judge the surface drainage across the site to be fair to good. Surface drainage across the subject property eventually drains northerly in an open ditch into Chattanooga Creek.

### 2.3 REGIONAL HYDROGEOLOGY

The surficial geology of the site vicinity generally consists of weathered soils originating from Cambrian to Pennsylvanian carbonates and clastics which have been moderately to highly faulted and folded. Ridges with northeast trending strike were formed from more resistant units. Surficial weathering of the carbonates formed to clays with varying proportions of silt, sand and small rock fragments. Depths to the weathered dolomite unit varied from 10 feet to 23 feet below the ground surface at this site.

Mr. Wright T dale  
Environmental Assessment  
314 Hooker Road  
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In the valley and ridge of southeast Tennessee, ground water occurs in variable amounts in the pore spaces of unconsolidated units (alluvium, colluvium, and residuum), along bedding planes and fractures in consolidated sediments, and in solution cavities of carbonate units. The average depth of water wells in this region is about 170 feet, and pumping rates vary from approximately 200 to 5,000 gallons per minute (GPM).

Surface and subsurface drainage are of interest during an environmental assessment since this provides an indication of the direction contaminants, if present, would be transported by surface waters or ground water.

Ground water flow can vary from surface drainage patterns in the local geology. It has been our experience in this geology that ground water is typically encountered as localized flows near the top of rock or in the fractures, seams, and cavities of the bedrock. The direction of the ground water flow in this calcareous rock geology is difficult to determine due to the extensive solutioning of the local bedrock and the complicated network of interconnected cave systems. However it is a reasonable

Mr. Wright T dale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
December 19, 1990

I thought the  
we were able to  
determine  
this from  
test wells

assumption that the general direction of the ground water flow on-site would be in a similar direction as the original unaltered topography (i.e., generally toward the north).

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Environmental Assessment  
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December 19, 1990

### 3.0 METHODS

#### 3.1 SAMPLING/BORING/MONITORING WELL CONSTRUCTION

The boring/monitoring well locations were selected by our staff as indicated on the plan included in Appendix A. For this study, seven exploratory borings were drilled and subsequently six 2" diameter PVC monitoring wells were constructed by Tri-State Testing and Drilling in October of 1990 to assess geologic and hydrogeologic conditions and to monitor ground water for detectable quantities of regulated contaminants. Table 2 is a summary of the boring and well construction data for all boring/monitoring wells on-site.

Surface samples of soil were also collected for chemical analysis. These areas included:

- 1) the area east of the main building, fueling area for the sandblasting rig,
- 2) the areas south of the sandblasting rig, concerned with heavy metals and paint waste,
- 3) area east of the paint storage building,  
and
- 4) drainage ditches along the railway line from the southern and western properties.

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The location of these samples are shown on the drawing in Appendix A and the chemical analysis is included in Appendix C.

The equipment (i.e., drill rig, sampling tools, etc.) was decontaminated prior to arriving at the site and between each boring location by steam-cleaning and washing with Liqui-Nox detergent manufactured by Alconox, Inc.

Soil borings were advanced using hollow-stem auger drilling techniques with an eight and one-half inch auger. The soil in all of the borings was drive sampled in general accordance with the American Society Testing and Materials (ASTM) D 1586 ("Penetration Test and Split Barrel Sampling of Soils"). Split-spoon samples were collected and logged at two and one-half feet to five feet intervals, and classification logs detailing subsurface soils were kept in accordance with protocols of the United Soil Classification System (USCS). Each boring was completed to a predetermined depth or bedrock refusal. At their completion, the borings were monitored for the presence of ground water.

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TABLE 2

SUMMARY of SOIL BORING and WELL CONSTRUCTION DATA

Boring/ Well No.	Surface* Elevation	Drilling Method	Boring Depth (ft)	Screen Depth (ft)	Date Well Installed
1	97.2	Auger	19.0 **	9.0-19.0	10/11/90
2	96.4	Auger	19.5 **	9.5-19.5	10/11/90
3	98.4	Auger	15.0	5.0-15.0	10/11/90
4	99.4	Auger	15.0	5.0-15.0	10/11/90
5	102.7	Auger	23.7 **	13.7-23.7	10/11/90
6	100.5	Auger	15.0 **	5.0-15.0	10/11/90
7	98.2	Auger	12.0 **	N/A	N/A

\* Assumed elevation of 100.00 feet for temporary bench mark (TBM) at the top nut of fire hydrant at Hooker Road and the main entrance to the property.

\*\* Earth auger refusal, probable bedrock surface.

Split-spoon samples were screened at our office facilities using an HNu photoionization detector (PID). Selected soil samples were preserved on ice and transported to a local analytical testing laboratory. Materials encountered in the borings are indicated on the boring logs in Appendix B.

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Two-inch flush threaded PVC monitoring wells were constructed within six (6) of the seven (7) borings. Each well was constructed using a 10-feet lower section of Schedule 40, 0.010-inch slotted screen. The remainder of the well consists of Schedule 40, two-inch diameter PVC riser pipe. Within the annular space a filter pack of washed, graded silica sand was placed to a minimum depth of one foot above the well screen. At least a one-foot thick annular seal of bentonite pellets was placed atop the filter pack, allowed to hydrate, and the remainder of the annular space was backfilled with a neat cement grout to the ground surface. Each well is protected by a four-inch locking, galvanized, square, steel riser tube or a flush ground surface mounted manhole cover set in the grout. The wells were finished with a water tight locking cap. All site monitoring wells were completed in accordance with Tri-State Testing & Drilling's specifications and guidelines. The wells were developed using hand bailing techniques.

Top of casing (TOC) elevations and ground surface elevations were surveyed relative to a common datum on the site. The datum point assumed is located at the top nut of

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fire hydrant at Hooker Road and the main entrance to the property (assumed 100.00 feet).

### 3.2 LIQUID-LEVEL MONITORING

In order to determine the nature and direction of ground water flow beneath the site periodic liquid-level measurements were taken in all on-site monitoring wells.

### 3.3 SOIL/WATER QUALITY MONITORING

A soil quality testing, ground water monitoring, and water quality testing program was undertaken at this site to inspect for the presence of priority pollutants, phase-separated hydrocarbons, dissolved hydrocarbon constituents, and volatile organic compounds within the soil and ground water beneath the site.

The following tasks were completed to assess soil quality:

- Collection of soil samples from selected locations across the site.
- Analysis of selected soil samples collected from locations across the site.

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The following tasks were completed to assess ground water quality:

- Periodic inspection of on-site monitoring wells for the presence of phase separated hydrocarbons atop the water table; and
- Analysis of water samples collected from on-site monitoring wells.

Soil Quality Sampling/Laboratory Testing

Soil samples were collected at this site observing the following protocols. Prior to sampling, a decontaminated, steel split-spoon sampler or hand auger was utilized to obtain all soil samples. The soil samples were collected and placed in glass jars and sealed for analysis. Selected soil samples were analyzed for priority pollutants, heavy metals, volatile organics, hydrocarbon analysis, total petroleum hydrocarbon (TPH) and polynuclear aromatic hydrocarbons (PAH's). The samples were preserved in accordance with US EPA protocols, labeled, placed in sealed glass containers in a cooler on ice along with the appropriate chain-of-custody forms.

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Water Quality Sampling/Laboratory Testing

Ground water samples were collected at this site observing the following protocols. A complete round of liquid-level measurements were taken to measure the static water level and determine the volume of water contained within each well casing. Ground water samples were collected from all monitoring wells and analyzed for the presence of dissolved phase hydrocarbons and fuel constituents.

Prior to sampling, the volume of well water within each well casing was calculated from the liquid-level measurements, and purged a minimum of five casing volumes using a pre-cleaned stainless steel hand bail. After well purging and a static water level recovery of at least 90 percent, water samples from each ground water monitoring well were collected and placed in two 40-ml zero head-space teflon septae vials for volatile organics, hydrocarbon analysis, and one 1-liter amber jar for total petroleum hydrocarbon (TPH) and polynuclear aromatic hydrocarbons (PAH's). The samples were preserved in accordance with US EPA protocols, labeled, and sealed in the proper containers then placed in coolers on ice along with the appropriate chain-of-custody forms.

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All samples were transported by our staff or by others with the proper chain of custody form to a local chemical testing facilities in Cleveland, Tennessee. The samples were analyzed in accordance with the methodologies listed below:

CONSTITUENTS	SAMPLE MATRIX	LABORATORY TESTING
BTX	Soil	Purge and trap GC EPA Method 5030/8020
PAH	Soil	Liquid chromatography EPA Method 8310
Total Metals	Soil	California Procedure
Cyanide	Soil	EPA Method
Benzene, toluene, xylenes (BTX)	Water	Modified EPA 602 Method SW-846
Total Petroleum hydrocarbons (TPH)	Water	Infrared spectrophotometer: EPA Method 418.1
Polynuclear aromatic hydrocarbons (PAH)	Water	Liquid chromatography EPA Method 610

Laboratory test results are included in Appendices C (soil) and D (water) of this report.

#### 3.4 WATER WELL SURVEY

A ground water usage survey was completed within a 0.25 mile radius of this site to identify the general extent of ground water usage in the area as well as to identify

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possible receptors which would be directly affected by ground water quality at this site.

To complete this survey, the following scope of work was completed:

- A visual survey was conducted in the immediate vicinity of the site to identify readily recognizable well users; and
- The United States Geological Survey Water Quality Division was contacted.

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#### 4.0 FINDINGS

##### 4.1 GEOLOGIC PROFILE

Seven (7) borings/monitoring wells were proposed at this site; however, Boring No. 7 received no ground water monitoring well. The locations of these borings and the installed ground water monitoring wells are shown on the plan in Appendix A. Beneath the surfacial features across the site, the borings encountered a variety of fill underlain by natural soil which is inturn underlain by weathered bedrock. The various soil strata encountered during our exploration is discussed further in the following sections.

##### Fill

The site was originally a topographically lower lying area and has been filled along the railway line and spur as well as within the areas north of the railway line. The borings indicated fill material ranging from a couple of feet to about ten feet below the ground surface. Generally the fill consists of various shades of brown and grey silty, sandy, clay containing crushed stone, gravel, and rock fragments. The fill material encountered ranges from soft to stiff in consistency with a relatively moderate coefficient of permeability.

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### Natural Soil

Underlying the fill, the borings encountered varying shades of reddish-brown, silty clay containing chert fragments. These moderately plastic soils are residual, having been produced from the in-situ weathering of the subjacent bedrock and contain apparent weaknesses of the parent bedrock (i.e., blocky structure). The residual soil encountered ranges from firm to very stiff in consistency with a relatively low coefficient of permeability.

### Bedrock

Published literature indicates that the site is underlain by dolomite. The bedrock surface elevation can be expected to be irregular due to its solubility and as indicated by the borings. Furthermore, fractures and solution channels are typical of this formation. Bedrock coring was not a part of the scope of this study; however, based upon the overburden soils obtained, the research data gathered, and our experience in this area, we concur with the published data that the bedrock underlying the site is dolomite of the Knox Group.

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#### 4.2 GROUND WATER OCCURRENCE

Ground water exists under water table conditions at depths ranging from about one (1) foot to nine (9) feet below the ground surface. Liquid-Level measurements (summarized on Table 3) were used to construct water table contour maps as shown on Figure 2. Based on this data, the generalized ground water flow regime travels in a northerly direction toward Chattanooga Creek.

#### 4.3 DETECTION OF POLLUTANTS

##### Soil Quality

During installation of the monitoring wells, soil samples were collected transported to our office and screened with a PID. Soils in areas of suspected concern were collected and analyzed for the presents of pollutants, results of the soil testing is indicated in Appendix C.

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TABLE 3

SUMMARY OF LIQUID LEVEL DATA

Elevation					
Date	Well No.	TOG	TOP	DTW	WTE
11/20/90	MW-1	97.2*	99.24	14.04	85.20
11/20/90	MW-2	96.4	98.88	11.11	87.77
11/20/90	MW-3	98.4	98.27	5.89	92.38
11/20/90	MW-4	99.4	99.21	5.32	93.89
11/20/90	MW-5	102.7	105.04	14.09	90.95
11/20/90	MW-6	100.5	100.44	0.73	99.71

Note: TOP = Top of Pipe  
TOG = Top of Ground Surface  
WTE = Water Level Elevation  
ND = Not Detected  
DTW = Depth to Water  
\* Assumed Elevation of 100.00 feet.

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Ground Water Quality

Ground water samples were collected from the six on-site monitoring wells on October 11, 18, and 25, 1990. The results of laboratory analysis are included as Appendix D. Table 4 is a summary of field vapor screening.

TABLE 4  
SUMMARY of FIELD VAPOR SCREENING

Well No.	HNu Reading (ppm)
1	1.0
2	0.5
3	10.0
4	0.7
5	0.5
6	0.5
7 (boring)	1.0

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December 19, 1990

## 5.0 SUMMARY OF FINDINGS

The following summary of findings is based upon and limited to the data obtained during this investigation.

- The geology beneath the site consists of residual clay containing chert fragments. Dolomite bedrock underlies the overburden at depths ranging from 12 feet to 23 feet below the ground surface.
  - Ground water exists at the site approximately 1 foot to 9 feet below the ground surface. The direction of the ground water flow appears to be toward the north.
  - Soil samples analyzed from the site did detect the presence of priority pollutants, hydrocarbons and volatile organic contaminants.
  - Ground water samples analyzed from the monitoring wells did detect the presence of priority pollutants, hydrocarbons and volatile organic contaminants.
- To general  
What would be  
a more  
detailed  
conclusion  
where levels  
acceptable or  
unacceptable  
what standards  
can they match  
against*

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- The water well survey indicated ground water users are not present within a 0.25 mile radius of the site.

COMMENTS

In conclusion, our investigation and record search of the F M C Acquisition Corporation Tract did reveal evidence of past hazardous and/or toxic waste contamination up to the published date of this report. Based upon and limited to the information gathered and presented in this report, in our opinion, the subject site appears to contain amounts of regulated hazardous and/or toxic waste contamination.

*for Valjean*

Environmental Concerns

Based on our findings, we judge the following items to be areas of environmental concern:

1. Areas of discarded 55-gallon drums,
2. East of and adjacent to the main building around the vicinity of monitoring well No. 3.
3. Slag piles south of the Central of Georgia Railroad Line and southeast of the sandblasting area,
4. Underground "form oil" storage tank,

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5. Noted concentration of Naphthalene in soils underlying concrete slab at boring No. 7,
6. The underground tile indicated on the plan from Chattanooga Coke and Chemical facility.

) your that  
was supposed  
to be not problem

As stated previously, it is recommended that a competent environmental specialist be consulted for review of this report and our findings to recommend any necessary "clean-up" operations, if any, to satisfy local, state, and federal regulations.

TRI-STATE TESTING & DRILLING appreciates this opportunity to be of service to F M C Acquisition Copropation. If you have any questions or comments concerning this report, please feel free to contact us at your convenience.

Mr. Wright T. Dale  
Environmental Assessment  
314 Hooker Road  
Chattanooga, Tennessee  
December 19, 1990

## 6.0 SELECTED REFERENCES

- Hamilton County Land Use Tax Map  
Hamilton County Courthouse  
Chattanooga, Tennessee;
- Hamilton County Record and Deed Books;
- USGS Fort Oglethorpe, Georgia-Tennessee Quadrangle;  
7.5 minute series; 1982
- Geologic Map of Tennessee, Cumberland Plateau and  
Valley and Ridge, 1966;
- U. S. Geological Survey Water Quality Division,  
Well Maps;
- Code of Federal Regulations, Part 40

**APPENDIX A**  
**SITE PLAN and BORING LOCATIONS**

**APPENDIX C**  
**SOIL QUALITY RESULTS**

LABORATORY REPORT

Attn: Mr. Q. T. Morphis

Tri-State Testing &

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results
L.C. HOLE #1 1'-2.5'	VOA	Attached
	Pesticide	Attached
	PCB's	Attached
	TPH (CA. Method Heavy)	3.5 mg/kg

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. SW SAND BLASTER

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-112

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	<5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

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*W.M. Seymour*  
William M. Seymour, QA Manager

**LABORATORY REPORT**

Attn: Mr. Q. T. Morphis

Tri-State Testing &amp;

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results	
L.C. SE PAINT STORAGE	Antimony	<0.75	mg/kg
<b>AREA</b>			
	Arsenic	<11	mg/kg
	Beryllium	<1	mg/kg
	Cadmium	3.98	mg/kg
	Chromium	21.9	mg/kg
	Copper	68.6	mg/kg
	Lead	273	mg/kg
	Nickel	14.0	mg/kg
	Selenium	<11	mg/kg
	Silver	<0.50	mg/kg
	Thallium	0.060	mg/kg
	Zinc	84.2	mg/kg
	VOA	Attached	
	Mercury	0.0042	mg/kg

VQA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. SE PAINT STORAGE AREA

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-113

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	<5
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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William M. Seymour, QA Manager

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. HOLE #1 1'-2.5'

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-114

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	<5
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*wm Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. HOLE #1 1'-2.5'

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-114

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	<5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

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William M. Seymour, QA Manager

*seymour*

## PESTICIDE REPORT:

Attn: Mr. Q. T. Morphis  
 Tri-State Testing &

Lab Reference: # 3555

Sample Received: 10/25/1990  
 Report Date: 11/08/1990  
 Sample ID: L.C. HOLE #1 1'-2.5'

Compound	Results ( $\mu\text{g}/\text{Kg}$ )
Aldrin	< 2.7
A-BHC	< 2
$\beta$ -BHC	< 4
$\delta$ -BHC	< 6
$\gamma$ -BHC (Lindane)	< 2.7
Chlordane (technical)	< 9.4
4,4'-DDD	< 7.4
4,4'-DDE	< 2.7
4,4'-DDT	< 8
Dieldrin	< 1.3
Endosulfan I	< 9.4
Endosulfan II	< 2.7
Endosulfan sulfate	< 44
Endrin	< 4
Heptachlor	< 2
Heptachlor Epoxide	< 56
Methoxychlor	< 120
Toxaphene	< 160
PCB-1016	<45
PCB-1221	<45
PCB-1232	<45
PCB-1242	<45
PCB-1248	<45
PCB-1254	<45
PCB-1260	<45

LABORATORY REPORT

Attn: Mr. Q. T. Morphis

Tri-State Testing &

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results	
L.C. HOLE #3 3.5'-5.0'	VOA	Attached	
	TPH (CA. Method Heavy)	260	mg/kg
	Cyanide	8.49	mg/kg
	Phenolics (Total)	0.232	mg/kg

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. HOLE #3 3.5'-5.0'

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-117

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	14
95-63-6	1,2,4-Trimethylbenzene	100
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	28
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	130
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	42
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	220
106-43-4	4-Chlorotoluene	110
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	260
75-00-3	Chloroethane	<10
67-66-3	Chloroform	19
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*W.M. Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. HOLE #3 3.5'-5.0'

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-117

CAS NO.	COMPOUND	RESULTS (µg/Kg)
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	6
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	18
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	320
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	16
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	41
133-02-7	o-Xylene	40
79-34-5	1,1,2,2-Tetrachloroethane	<5

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*W.M. Seymour*  
William M. Seymour, QA Manager



# American Analytical Laboratories, Inc.

1550 37th Street, N.E. P.O. Box 3898 Cleveland, Tennessee 37320-3898 (615) 476-7766

## LABORATORY REPORT

Attn: Mr. Q. T. Morphis  
Tri-State Testing &  
Drilling  
P. O. Box 72596  
Chattanooga TN 37407

Lab Reference # 3717  
Sample Received: 11/21/1990  
Report Date: 12/07/1990  
Sample Matrix: SOIL

Authorized Release of Data:

Maurice Smith

Maurice Smith, Ph.D.  
Senior Chemist

Sample ID	Analysis	Results
LANDES CO. 12'E OF MW #3	VOA	Attached
	TPH (CA. Method Light)	<0.1 mg/kg
	Antimony	<2.5 mg/kg
	Arsenic	<4.4 mg/kg
	Beryllium	<0.40 mg/kg
	Cadmium	2.12 mg/kg
	Chromium	32.7 mg/kg
	Copper	48.2 mg/kg
	Lead	167 mg/kg
	Nickel	8.63 mg/kg
	Selenium	<4.4 mg/kg
	Silver	0.25 mg/kg
	Thallium	<9.8 mg/kg
	Zinc	820 mg/kg
	Mercury	0.0005 mg/L
	TPH (CA. Method Heavy)	82 mg/kg

Quality Assurance Manager: William M. Seymour  
William M. Seymour

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3717

Date Received: 11/21/1990

Customer Sample Ref:  
LANDES CO. 12'E OF MW #3

Report Date: 12/07/1990

Matrix: SOIL

Lab Sample ID: 3717-101

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	<5
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-06-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*William M. Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3717

Date Received: 11/21/1990

Customer Sample Ref:  
LANDES CO. 12'E OF MW #3

Report Date: 12/07/1990

Matrix: SOIL

Lab Sample ID: 3717-101

CAS NO.	COMPOUND	RESULTS (µg/Kg)
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	<5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

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*laurie m. seymour*  
William M. Seymour, QA Manager

## LABORATORY REPORT

Attn: Mr. Q. T. Morphis

Tri-State Testing &

Lab Reference # 3717

Sample Received: 11/21/1990

Report Date: 12/07/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results
LANDES CO. 42'S OF MW #3	VOA	Attached
	TPH (CA. Method Light)	<0.1 mg/kg
	Antimony	<2.5 mg/kg
	Arsenic	<4.4 mg/kg
	Beryllium	0.57 mg/kg
	Cadmium	3.05 mg/kg
	Chromium	19.9 mg/kg
	Copper	10.4 mg/kg
	Lead	15.5 mg/kg
	Nickel	10.5 mg/kg
	Selenium	<4.4 mg/kg
	Silver	<0.20 mg/kg
	Thallium	<9.8 mg/kg
	Zinc	43.0 mg/kg
	Mercury	0.0006 mg/L
	TPH (CA. Method Heavy)	96 mg/kg

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3717

Date Received: 11/21/1990

Customer Sample Ref:  
LANDES CO. 42'S OF MW #3

Report Date: 12/07/1990

Matrix: SOIL

Lab Sample ID: 3717-102

CAS NO.	COMPOUND	RESULTS (µg/Kg)
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	<5
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-06-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*W.M. Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3717

Date Received: 11/21/1990

Customer Sample Ref:  
LANDES CO. 42'S OF MW #3

Report Date: 12/07/1990

Matrix: SOIL

Lab Sample ID: 3717-102

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	<5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

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*lwm/seymour*  
William M. Seymour, QA Manager

**LABORATORY REPORT**

Attn: Mr. Q. T. Morphis

Tri-State Testing &

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results
L.C. HOLE #6 1.0'-2.5'	VOA	Attached
	Cyanide	<1 mg/kg
	Phenolics (Total)	0.045 mg/kg

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. HOLE #6 1.0'-2.5'

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-116

CAS NO.	COMPOUND	RESULTS (µg/Kg)
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	<5
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*W.M. Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. HOLE #6 1.0'-2.5'

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-116

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

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*wm Seymour*  
William M. Seymour, QA Manager

**LABORATORY REPORT**

Attn: Mr. Q. T. Morphis

Tri-State Testing &

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results
L.C. HOLE #7 1.0'-2.5'	VOA	Attached
	Cyanide	1.04 mg/kg
	Phenolics (Total)	0.031 mg/kg

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. HOLE #7 1.0'-2.5'

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-115

CAS NO.	COMPOUND	RESULTS (µg/Kg)
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	7
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*William M. Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. HOLE #7 1.0'-2.5'

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-115

CAS NO.	COMPOUND	RESULTS (µg/Kg)
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	1,100
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	<5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

American Analytical Laboratories, Inc.  
(615) 476-7766

William M. Seymour, QA Manager

**LABORATORY REPORT**

Attn: Mr. Q. T. Morphis

Tri-State Testing &amp;

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results	
L.C. SLAG PILE	Mercury	0.248	mg/kg
	VOA	Attached	
	Aluminum	121000	mg/kg
	Arsenic	<11	mg/kg
	Antimony	16.8	mg/kg
	Barium	105	mg/kg
	Beryllium	0.442	mg/kg
	Boron	49.3	mg/kg
	Cadmium	22.1	mg/kg
	Calcium	11600	mg/kg
	Chromium	210	mg/kg
	Cobalt	9.46	mg/kg
	Copper	33700	mg/kg
	Iron	33300	mg/kg
	Lead	14900	mg/kg
	Magnesium	1620	mg/kg
	Manganese	699	mg/kg

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. SLAG PILE

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-111

CAS NO.	COMPOUND	RESULTS (µg/Kg)
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	10
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*W.M. Seymour*  
William M. Seymour, QA Manager

VQA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. SLAG PILE

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-111

CAS NO.	COMPOUND	RESULTS (µg/Kg)
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	150
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	11
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

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William M. Seymour, QA Manager

*wmseymour*

## LABORATORY REPORT

Attn: Mr. Q. T. Morphis

Tri-State Testing &

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results	
L.C. SLAG PILE	Molybdenum	6.73	mg/kg
	Nickel	317	mg/kg
	Potassium	0.083	mg/kg
	Selenium	<11	mg/kg
	Silicon	188	mg/kg
	Silver	3.32	mg/kg
	Sodium	0.137	mg/kg
	Thallium	<0.05	mg/kg
	Vanadium	9.53	mg/kg
	Zinc	12200	mg/kg

## LABORATORY REPORT

Attn: Mr. Q. T. Morphis

Tri-State Testing &amp;

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results	
L.C.DRAINAGE DITCH / R.R.	Antimony	<0.75	mg/kg
	Arsenic	<11	mg/kg
	Beryllium	0.263	mg/kg
	Cadmium	0.690	mg/kg
	Chromium	7.08	mg/kg
	Copper	22.6	mg/kg
	Lead	84.2	mg/kg
	Nickel	2.78	mg/kg
	Selenium	<11	mg/kg
	Silver	0.263	mg/kg
	Thallium	<0.050	mg/kg
	Zinc	33.5	mg/kg
	Mercury	0.279	mg/kg
	VOA	Attached	

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

**Attn:** Mr. Q. T. Morphis  
Tri-State Testing &

**Lab Reference #** 3555

**Date Received:** 10/25/1990

**Customer Sample Ref:**  
L.C.DRAINAGE DITCH / R.R.

**Report Date:** 11/08/1990

**Matrix:** SOIL

**Lab Sample ID:** 3555-110

CAS NO.	COMPOUND	RESULTS (µg/Kg)
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	<5
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*W.M. Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C.DRAINAGE DITCH / R.R.

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-110

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	<5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

American Analytical Laboratories, Inc.  
(615) 476-7766

*William Seymour*  
William M. Seymour, QA Manager

## LABORATORY REPORT

Attn: Mr. Q. T. Morphis

Tri-State Testing &amp;

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results	
L.C. SW SAND BLASTER	Antimony	<6.25	mg/kg
	Arsenic	<11	mg/kg
	Beryllium	<1	mg/kg
	Cadmium	7.0	mg/kg
	Chromium	89.2	mg/kg
	Copper	62.0	mg/kg
	Lead	749	mg/kg
	Nickel	16.2	mg/kg
	Selenium	<11	mg/kg
	Silver	<0.5	mg/kg
	Thallium	<0.05	mg/kg
	Zinc	153	mg/kg
	VOA	Attached	
	Mercury	0.0232	mg/kg

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. SW SAND BLASTER

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-112

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	<5
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*W.M. Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. SE PAINT STORAGE AREA

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-113

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	<5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

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William M. Seymour, QA Manager

*Wm Seymour*

**APPENDIX D**  
**WATER QUALITY RESULTS**

**PESTICIDE REPORT:**

Attn: Mr. Q. T. Morphis  
 Tri-State Testing &

Lab Reference: # 3555

Sample Received: 10/25/1990

Report Date: 11/08/1990

Sample ID: L.C.#1

Compound	Results ( $\mu\text{g/L}$ )
Aldrin	< 0.04
A-BHC	< 0.03
$\beta$ -BHC	< 0.06
$\delta$ -BHC	< 0.09
$\gamma$ -BHC (Lindane)	< 0.04
Chlordane (technical)	< 0.14
4,4'-DDD	< 0.11
4,4'-DDE	< 0.04
4,4'-DDT	< 0.12
Dieldrin	< 0.02
Endosulfan I	< 0.14
Endosulfan II	< 0.04
Endosulfan sulfate	< 0.66
Endrin	< 0.06
Endrin Aldehyde	< 0.23
Heptachlor	< 0.03
Heptachlor Epoxide	< 0.83
Methoxychlor	< 1.76
Toxaphene	< 2.4
PCB-1016	< 0.65
PCB-1221	< 0.65
PCB-1232	< 0.65
PCB-1242	< 0.65
PCB-1248	< 0.65
PCB-1254	< 0.65
PCB-1260	< 0.65



# American Analytical Laboratories, Inc.

1550 37th Street, N.E. P.O. Box 3898 Cleveland, Tennessee 37320-3898 (615) 476-7766

## LABORATORY REPORT

Attn: Mr. Q. T. Morphis  
Tri-State Testing &  
Drilling  
P. O. Box 72596  
Chattanooga TN 37407

Lab Reference # 3555  
Sample Received: 10/25/1990  
Report Date: 11/12/1990  
Sample Matrix: WATER

Authorized Release of Data:

Maurice R. Smith, Ph.D.  
Maurice Smith, Ph.D.  
Senior Chemist

Sample ID	Analysis	Results
L.C.#1	VOA	Attached
	TPH (CA. Method Light)	<0.1 mg/L
	TPH (CA. Method Heavy)	0.4 mg/L
	Pesticide	Attached
	PCB's	Attached

Quality Assurance Manager: William M. Seymour  
William M. Seymour

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

**Attn:** Mr. Q. T. Morphis  
Tri-State Testing &

**Lab Reference #** 3555

**Date Received:** 10/25/1990

**Customer Sample Ref:**  
L.C.#1

**Report Date:** 11/08/1990

**Matrix:** WATER

**Lab Sample ID:** 3555-101

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g/L}$ )
630-20-6	1,1,1,2-Tetrachloroethane	< 5
71-55-6	1,1,1-Trichloroethane	< 5
79-00-5	1,1,2-Trichloroethane	< 5
75-34-3	1,1-Dichloroethane	< 5
75-35-4	1,1-Dichloroethene	< 5
593-58-6	1,1-Dichloropropene	< 5
87-61-6	1,2,3-Trichlorobenzene	< 5
96-18-4	1,2,3-Trichloropropane	< 5
120-82-1	1,2,4-Trichlorobenzene	< 5
95-63-6	1,2,4-Trimethylbenzene	< 5
106-93-4	1,2-Dibromoethane	< 5
96-12-8	1,2-Dibromo-3-chloropropane	< 5
95-50-1	1,2-Dichlorobenzene	< 5
107-02-2	1,2-Dichloroethane	< 5
78-87-5	1,2-Dichloropropane	< 5
108-67-8	1,3,5-Trimethylbenzene	< 5
541-73-1	1,3-Dichlorobenzene	< 5
142-28-9	1,3-Dichloropropane	< 5
106-46-7	1,4-Dichlorobenzene	< 5
594-20-7	2,2-Dichloropropane	< 5
95-49-8	2-Chlorotoluene	< 5
106-43-4	4-Chlorotoluene	< 5
71-43-2	Benzene	< 5
108-86-1	Bromobenzene	< 5
74-97-5	Bromochloromethane	< 5
75-27-4	Bromodichloromethane	< 5
75-25-2	Bromoform	< 5
74-83-9	Bromomethane	< 10
56-23-5	Carbon Tetrachloride	< 5
108-90-7	Chlorobenzene	< 5
75-00-3	Chloroethane	< 10
67-66-3	Chloroform	< 5
74-87-3	Chloromethane	< 10
156-69-4	cis-1,2-Dichloroethene	< 5
10061-01-5	cis-1,3-Dichloropropene	< 5
124-48-1	Dibromochloromethane	< 5

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*larry m. seymour*

William M. Seymour, QA Manager

VQA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C.#1

Report Date: 11/08/1990

Matrix: WATER

Lab Sample ID: 3555-101

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g/L}$ )
74-95-3	Dibromomethane	< 5
75-71-8	Dichlorodifluoromethane	< 5
100-41-4	Ethylbenzene	< 5
87-68-3	Hexachlorobutadiene	< 5
98-82-8	Isopropylbenzene	< 5
75-09-2	Methylene Chloride	< 5
91-20-3	Naphthalene	< 5
104-51-8	n-Butylbenzene	< 5
103-65-1	n-Propylbenzene	< 5
99-87-6	p-Isopropyltoluene	< 5
135-98-8	sec-Butylbenzene	< 5
100-42-5	Styrene	< 5
98-06-6	tert-Butylbenzene	< 5
127-18-4	Tetrachloroethene	< 5
108-88-3	Toluene	< 5
540-59-0	trans-1,2-Dichloroethene	< 5
10061-02-6	trans-1,3-Dichloropropene	< 5
79-01-6	Trichloroethene	< 5
75-69-4	Trichlorofluoromethane	< 10
75-01-4	Vinyl Chloride	< 10
133-02-7	p-Xylene/m-Xylene (total)	< 5
133-02-7	o-Xylene	< 5
79-34-5	1,1,2,2-Tetrachloroethane	< 5

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William M. Seymour  
William M. Seymour, QA Manager

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

**Attn: Mr. Q. T. Morphis**  
Tri-State Testing &

**Lab Reference # 3555**

**Date Received:** 10/25/1990

**Customer Sample Ref:**  
L.C. #1 DUPLICATE

**Report Date:** 11/08/1990

**Matrix:** WATER

**Lab Sample ID:** 101 DUP

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g/L}$ )
630-20-6	1,1,1,2-Tetrachloroethane	< 5
71-55-6	1,1,1-Trichloroethane	< 5
79-00-5	1,1,2-Trichloroethane	< 5
75-34-3	1,1-Dichloroethane	< 5
75-35-4	1,1-Dichloroethene	< 5
593-58-6	1,1-Dichloropropene	< 5
87-61-6	1,2,3-Trichlorobenzene	< 5
96-18-4	1,2,3-Trichloropropane	< 5
120-82-1	1,2,4-Trichlorobenzene	< 5
95-63-6	1,2,4-Trimethylbenzene	< 5
106-93-4	1,2-Dibromoethane	< 5
96-12-8	1,2-Dibromo-3-chloropropane	< 5
95-50-1	1,2-Dichlorobenzene	< 5
107-02-2	1,2-Dichloroethane	< 5
78-87-5	1,2-Dichloropropane	< 5
108-67-8	1,3,5-Trimethylbenzene	< 5
541-73-1	1,3-Dichlorobenzene	< 5
142-28-9	1,3-Dichloropropane	< 5
106-46-7	1,4-Dichlorobenzene	< 5
594-20-7	2,2-Dichloropropane	< 5
95-49-8	2-Chlorotoluene	< 5
106-43-4	4-Chlorotoluene	< 5
71-43-2	Benzene	< 5
108-86-1	Bromobenzene	< 5
74-97-5	Bromochloromethane	< 5
75-27-4	Bromodichloromethane	< 5
75-25-2	Bromoform	< 5
74-83-9	Bromomethane	< 10
56-23-5	Carbon Tetrachloride	< 5
108-90-7	Chlorobenzene	< 5
75-00-3	Chloroethane	< 10
67-66-3	Chloroform	< 5
74-87-3	Chloromethane	< 10
156-69-4	cis-1,2-Dichloroethene	< 5
10061-01-5	cis-1,3-Dichloropropene	< 5
124-48-1	Dibromochloromethane	< 5

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William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. #1 DUPLICATE

Report Date: 11/08/1990

Matrix: WATER

Lab Sample ID: 101 DUP

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g/L}$ )
74-95-3	Dibromomethane	< 5
75-71-8	Dichlorodifluoromethane	< 5
100-41-4	Ethylbenzene	< 5
87-68-3	Hexachlorobutadiene	< 5
98-82-8	Isopropylbenzene	< 5
75-09-2	Methylene Chloride	< 5
91-20-3	Naphthalene	< 5
104-51-8	n-Butylbenzene	< 5
103-65-1	n-Propylbenzene	< 5
99-87-6	p-Isopropyltoluene	< 5
135-98-8	sec-Butylbenzene	< 5
100-42-5	Styrene	< 5
98-06-6	tert-Butylbenzene	< 5
127-18-4	Tetrachloroethene	< 5
108-88-3	Toluene	< 5
540-59-0	trans-1,2-Dichloroethene	< 5
10061-02-6	trans-1,3-Dichloropropene	< 5
79-01-6	Trichloroethene	< 5
75-69-4	Trichlorofluoromethane	< 10
75-01-4	Vinyl Chloride	< 10
133-02-7	p-Xylene/m-Xylene (total)	< 5
133-02-7	o-Xylene	< 5
79-34-5	1,1,2,2-Tetrachloroethane	< 5

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*W.M. Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C.#1 SPIKE

Report Date: 11/08/1990

Matrix: WATER

Lab Sample ID: 101-SPK

CAS NO.	COMPOUND	RECOVERY
630-20-6	1,1,1,2-Tetrachloroethane	109 %
71-55-6	1,1,1-Trichloroethane	95 %
79-00-5	1,1,2-Trichloroethane	99 %
75-34-3	1,1-Dichloroethane	95 %
75-35-4	1,1-Dichloroethene	89 %
593-58-6	1,1-Dichloropropene	95 %
87-61-6	1,2,3-Trichlorobenzene	113 %
96-18-4	1,2,3-Trichloropropane	113 %
120-82-1	1,2,4-Trichlorobenzene	111 %
95-63-6	1,2,4-Trimethylbenzene	99 %
106-93-4	1,2-Dibromoethane	99 %
96-12-8	1,2-Dibromo-3-chloropropane	116 %
95-50-1	1,2-Dichlorobenzene	104 %
107-02-2	1,2-Dichloroethane	102 %
78-87-5	1,2-Dichloropropane	90 %
108-67-8	1,3,5-Trimethylbenzene	96 %
541-73-1	1,3-Dichlorobenzene	102 %
142-28-9	1,3-Dichloropropane	101 %
106-46-7	1,4-Dichlorobenzene	97 %
594-20-7	2,2-Dichloropropane	103 %
95-49-8	2-Chlorotoluene	102 %
106-43-4	4-Chlorotoluene	98 %
71-43-2	Benzene	101 %
108-86-1	Bromobenzene	98 %
74-97-5	Bromochloromethane	93 %
75-27-4	Bromodichloromethane	92 %
75-25-2	Bromoform	100 %
74-83-9	Bromomethane	113 %
56-23-5	Carbon Tetrachloride	96 %
108-90-7	Chlorobenzene	93 %
75-00-3	Chloroethane	96 %
67-66-3	Chloroform	94 %
74-87-3	Chloromethane	118 %
156-69-4	cis-1,2-Dichloroethene	97 %
10061-01-5	cis-1,3-Dichloropropene	100 %
124-48-1	Dibromochloromethane	99 %

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*cmnd Seymour*

William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C.#1 SPIKE

Report Date: 11/08/1990

Matrix: WATER

Lab Sample ID: 101-SPK

CAS NO.	COMPOUND	RECOVERY
74-95-3	Dibromomethane	96 %
75-71-8	Dichlorodifluoromethane	101 %
100-41-4	Ethylbenzene	97 %
87-68-3	Hexachlorobutadiene	98 %
98-82-8	Isopropylbenzene	97 %
75-09-2	Methylene Chloride	102 %
91-20-3	Naphthalene	102 %
104-51-8	n-Butylbenzene	98 %
103-65-1	n-Propylbenzene	96 %
99-87-6	p-Isopropyltoluene	96 %
135-98-8	sec-Butylbenzene	98 %
100-42-5	Styrene	98 %
98-06-6	tert-Butylbenzene	102 %
127-18-4	Tetrachloroethene	101 %
108-88-3	Toluene	96 %
540-59-0	trans-1,2-Dichloroethene	87 %
10061-02-6	trans-1,3-Dichloropropene	98 %
79-01-6	Trichloroethene	92 %
75-69-4	Trichlorofluoromethane	97 %
75-01-4	Vinyl Chloride	104 %
133-02-7	p-Xylene/m-Xylene (total)	100 %
133-02-7	o-Xylene	100 %
79-34-5	1,1,2,2-Tetrachloroethane	109 %

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William M. Seymour, QA Manager

LABORATORY REPORT

Attn: Mr. Q. T. Morphis

Tri-State Testing &

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: WATER

Sample ID	Analysis	Results
L.C.#2	VOA	Attached

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

**Attn:** Mr. Q. T. Morphis  
Tri-State Testing &

**Lab Reference #** 3555

**Date Received:** 10/25/1990

**Customer Sample Ref:**  
L.C.#2

**Report Date:** 11/08/1990

**Matrix:** WATER

**Lab Sample ID:** 3555-103

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g/L}$ )
630-20-6	1,1,1,2-Tetrachloroethane	< 5
71-55-6	1,1,1-Trichloroethane	< 5
79-00-5	1,1,2-Trichloroethane	< 5
75-34-3	1,1-Dichloroethane	< 5
75-35-4	1,1-Dichloroethene	< 5
593-58-6	1,1-Dichloropropene	< 5
87-61-6	1,2,3-Trichlorobenzene	< 5
96-18-4	1,2,3-Trichloropropane	< 5
120-82-1	1,2,4-Trichlorobenzene	< 5
95-63-6	1,2,4-Trimethylbenzene	< 5
106-93-4	1,2-Dibromoethane	< 5
96-12-8	1,2-Dibromo-3-chloropropane	< 5
95-50-1	1,2-Dichlorobenzene	< 5
107-02-2	1,2-Dichloroethane	< 5
78-87-5	1,2-Dichloropropane	< 5
108-67-8	1,3,5-Trimethylbenzene	< 5
541-73-1	1,3-Dichlorobenzene	< 5
142-28-9	1,3-Dichloropropane	< 5
106-46-7	1,4-Dichlorobenzene	< 5
594-20-7	2,2-Dichloropropane	< 5
95-49-8	2-Chlorotoluene	< 5
106-43-4	4-Chlorotoluene	< 5
71-43-2	Benzene	< 5
108-86-1	Bromobenzene	< 5
74-97-5	Bromochloromethane	< 5
75-27-4	Bromodichloromethane	< 5
75-25-2	Bromoform	< 5
74-83-9	Bromomethane	< 10
56-23-5	Carbon Tetrachloride	< 5
108-90-7	Chlorobenzene	< 5
75-00-3	Chloroethane	< 10
67-66-3	Chloroform	< 5
74-87-3	Chloromethane	< 10
156-69-4	cis-1,2-Dichloroethene	< 5
10061-01-5	cis-1,3-Dichloropropene	< 5
124-48-1	Dibromochloromethane	< 5

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*William M. Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C.#2

Report Date: 11/08/1990

Matrix: WATER

Lab Sample ID: 3555-103

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g/L}$ )
74-95-3	Dibromomethane	< 5
75-71-8	Dichlorodifluoromethane	< 5
100-41-4	Ethylbenzene	< 5
87-68-3	Hexachlorobutadiene	< 5
98-82-8	Isopropylbenzene	< 5
75-09-2	Methylene Chloride	< 5
91-20-3	Naphthalene	< 5
104-51-8	n-Butylbenzene	< 5
103-65-1	n-Propylbenzene	< 5
99-87-6	p-Isopropyltoluene	< 5
135-98-8	sec-Butylbenzene	< 5
100-42-5	Styrene	< 5
98-06-6	tert-Butylbenzene	< 5
127-18-4	Tetrachloroethene	< 5
108-88-3	Toluene	< 5
540-59-0	trans-1,2-Dichloroethene	< 5
10061-02-6	trans-1,3-Dichloropropene	< 5
79-01-6	Trichloroethene	< 5
75-69-4	Trichlorofluoromethane	< 10
75-01-4	Vinyl Chloride	< 10
133-02-7	p-Xylene/m-Xylene (total)	< 5
133-02-7	o-Xylene	< 5
79-34-5	1,1,2,2-Tetrachloroethane	< 5

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*W.M. Seymour*  
William M. Seymour, QA Manager

**LABORATORY REPORT**

Attn: Mr. Q. T. Morphis

Tri-State Testing &amp;

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: WATER

Sample ID	Analysis	Results
L.C.#3	VOA	Attached
	BNA	Attached
	Phenolics (Total)	0.068 mg/L
	Cyanide	<0.02 mg/L
	Mercury	<0.0002 mg/L
	Aluminum	1.86 mg/L
	Arsenic	<0.225 mg/L
	Antimony	<0.125 mg/L
	Barium	0.049 mg/L
	Beryllium	<0.020 mg/L
	Boron	0.04 mg/L
	Cadmium	<0.010 mg/L
	Calcium	149 mg/L
	Chromium	<0.010 mg/L
	Cobalt	<0.015 mg/L
	Copper	<0.010 mg/L
	Iron	4.98 mg/L

**LABORATORY REPORT**

Attn: Mr. Q. T. Morphis

Tri-State Testing &amp;

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results	
L.C. SLAG PILE	Molybdenum	6.73	mg/kg
	Nickel	317	mg/kg
	Potassium	0.083	mg/kg
	Selenium	<11	mg/kg
	Silicon	188	mg/kg
	Silver	3.32	mg/kg
	Sodium	0.137	mg/kg
	Thallium	<0.05	mg/kg
	Vanadium	9.53	mg/kg
	Zinc	12200	mg/kg

**LABORATORY REPORT**

Attn: Mr. Q. T. Morphis

Tri-State Testing &amp;

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results	
L.C.DRAINAGE DITCH / R.R.	Antimony	<0.75	mg/kg
	Arsenic	<11	mg/kg
	Beryllium	0.263	mg/kg
	Cadmium	0.690	mg/kg
	Chromium	7.08	mg/kg
	Copper	22.6	mg/kg
	Lead	84.2	mg/kg
	Nickel	2.78	mg/kg
	Selenium	<11	mg/kg
	Silver	0.263	mg/kg
	Thallium	<0.050	mg/kg
	Zinc	33.5	mg/kg
	Mercury	0.279	mg/kg
	VOA	Attached	

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C.DRAINAGE DITCH / R.R.

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-110

CAS NO.	COMPOUND	RESULTS (µg/Kg)
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	<5
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*William M. Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference #: 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C.DRAINAGE DITCH / R.R.

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-110

CAS NO.	COMPOUND	RESULTS (µg/Kg)
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	<5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

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*William Seymour*  
William M. Seymour, QA Manager

## LABORATORY REPORT

Attn: Mr. Q. T. Morphis

Tri-State Testing &amp;

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results	
L.C. SW SAND BLASTER	Antimony	<6.25	mg/kg
	Arsenic	<11	mg/kg
	Beryllium	<1	mg/kg
	Cadmium	7.0	mg/kg
	Chromium	89.2	mg/kg
	Copper	62.0	mg/kg
	Lead	749	mg/kg
	Nickel	16.2	mg/kg
	Selenium	<11	mg/kg
	Silver	<0.5	mg/kg
	Thallium	<0.05	mg/kg
	Zinc	153	mg/kg
	VOA	Attached	
	Mercury	0.0232	mg/kg

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. SW SAND BLASTER

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-112

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	<5
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromochloromethane	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference #: 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. SW SAND BLASTER

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-112

CAS NO.	COMPOUND	RESULTS (µg/Kg)
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	<5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

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*wmk/seymour*  
William M. Seymour, QA Manager

## LABORATORY REPORT

Attn: Mr. Q. T. Morphis

Tri-State Testing &amp;

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: SOIL

Sample ID	Analysis	Results	
L.C. SE PAINT STORAGE	Antimony	<0.75	mg/kg
<b>AREA</b>			
	Arsenic	<11	mg/kg
	Beryllium	<1	mg/kg
	Cadmium	3.98	mg/kg
	Chromium	21.9	mg/kg
	Copper	68.6	mg/kg
	Lead	273	mg/kg
	Nickel	14.0	mg/kg
	Selenium	<11	mg/kg
	Silver	<0.50	mg/kg
	Thallium	0.060	mg/kg
	Zinc	84.2	mg/kg
	VOA	Attached	
	Mercury	0.0042	mg/kg

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference #: 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. SE PAINT STORAGE AREA

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-113

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g}/\text{Kg}$ )
630-20-6	1,1,1,2-Tetrachloroethane	<5
71-55-6	1,1,1-Trichloroethane	<5
79-00-5	1,1,2-Trichloroethane	<5
75-34-3	1,1-Dichloroethane	<5
75-35-4	1,1-Dichloroethene	<5
593-58-6	1,1-Dichloropropene	<5
87-61-6	1,2,3-Trichlorobenzene	<5
96-18-4	1,2,3-Trichloropropane	<5
120-82-1	1,2,4-Trichlorobenzene	<5
95-63-6	1,2,4-Trimethylbenzene	<5
106-93-4	1,2-Dibromoethane	<5
96-12-8	1,2-Dibromo-3-chloropropane	<5
95-50-1	1,2-Dichlorobenzene	<5
107-02-2	1,2-Dichloroethane	<5
78-87-5	1,2-Dichloropropane	<5
108-67-8	1,3,5-Trimethylbenzene	<5
541-73-1	1,3-Dichlorobenzene	<5
142-28-9	1,3-Dichloropropane	<5
106-46-7	1,4-Dichlorobenzene	<5
594-20-7	2,2-Dichloropropane	<5
95-49-8	2-Chlorotoluene	<5
106-43-4	4-Chlorotoluene	<5
71-43-2	Benzene	<5
108-86-1	Bromobenzene	<5
74-97-5	Bromo(chloromethane)	<5
75-27-4	Bromodichloromethane	<5
75-25-2	Bromoform	<5
74-83-9	Bromomethane	<10
56-23-5	Carbon Tetrachloride	<5
108-90-7	Chlorobenzene	<5
75-00-3	Chloroethane	<10
67-66-3	Chloroform	<5
74-87-3	Chloromethane	<10
156-69-4	cis-1,2-Dichloroethene	<5
10061-01-5	cis-1,3-Dichloropropene	<5
124-48-1	Dibromochloromethane	<5

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*lcm*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. SE PAINT STORAGE AREA

Report Date: 11/08/1990

Matrix: SOIL

Lab Sample ID: 3555-113

CAS NO.	COMPOUND	RESULTS (µg/Kg)
74-95-3	Dibromomethane	<5
75-71-8	Dichlorodifluoromethane	<5
100-41-4	Ethylbenzene	<5
87-68-3	Hexachlorobutadiene	<5
98-82-8	Isopropylbenzene	<5
75-09-2	Methylene Chloride	<5
91-20-3	Naphthalene	<5
104-51-8	n-Butylbenzene	<5
103-65-1	n-Propylbenzene	<5
99-87-6	p-Isopropyltoluene	<5
135-98-8	sec-Butylbenzene	<5
100-42-5	Styrene	<5
98-06-6	tert-Butylbenzene	<5
127-18-4	Tetrachloroethene	<5
108-88-3	Toluene	<5
540-59-0	trans-1,2-Dichloroethene	<5
10061-02-6	trans-1,3-Dichloropropene	<5
79-01-6	Trichloroethene	<5
75-69-4	Trichlorofluoromethane	<10
75-01-4	Vinyl Chloride	<10
133-02-7	p-Xylene/m-Xylene (total)	<5
133-02-7	o-Xylene	<5
79-34-5	1,1,2,2-Tetrachloroethane	<5

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*Wm. Seymour*  
William M. Seymour, QA Manager

**APPENDIX D**  
**WATER QUALITY RESULTS**

## PESTICIDE REPORT:

Attn: Mr. Q. T. Morphis  
 Tri-State Testing &

Lab Reference: # 3555

Sample Received: 10/25/1990

Report Date: 11/08/1990

Sample ID: L.C.#1

Compound	Results ( $\mu\text{g/L}$ )
Aldrin	< 0.04
A-BHC	< 0.03
$\beta$ -BHC	< 0.06
$\delta$ -BHC	< 0.09
$\gamma$ -BHC (Lindane)	< 0.04
Chlordane (technical)	< 0.14
4,4'-DDD	< 0.11
4,4'-DDE	< 0.04
4,4'-DDT	< 0.12
Dieldrin	< 0.02
Endosulfan I	< 0.14
Endosulfan II	< 0.04
Endosulfan sulfate	< 0.66
Endrin	< 0.06
Endrin Aldehyde	< 0.23
Heptachlor	< 0.03
Heptachlor Epoxide	< 0.83
Methoxychlor	< 1.76
Toxaphene	< 2.4
PCB-1016	< 0.65
PCB-1221	< 0.65
PCB-1232	< 0.65
PCB-1242	< 0.65
PCB-1248	< 0.65
PCB-1254	< 0.65
PCB-1260	< 0.65

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

**Attn:** Mr. Q. T. Morphis  
Tri-State Testing &

**Lab Reference #** 3555

**Date Received:** 10/25/1990

**Customer Sample Ref:**  
L.C.#1

**Report Date:** 11/08/1990

**Matrix:** WATER

**Lab Sample ID:** 3555-101

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g/L}$ )
630-20-6	1,1,1,2-Tetrachloroethane	< 5
71-55-6	1,1,1-Trichloroethane	< 5
79-00-5	1,1,2-Trichloroethane	< 5
75-34-3	1,1-Dichloroethane	< 5
75-35-4	1,1-Dichloroethene	< 5
593-58-6	1,1-Dichloropropene	< 5
87-61-6	1,2,3-Trichlorobenzene	< 5
96-18-4	1,2,3-Trichloropropane	< 5
120-82-1	1,2,4-Trichlorobenzene	< 5
95-63-6	1,2,4-Trimethylbenzene	< 5
106-93-4	1,2-Dibromoethane	< 5
96-12-8	1,2-Dibromo-3-chloropropane	< 5
95-50-1	1,2-Dichlorobenzene	< 5
107-02-2	1,2-Dichloroethane	< 5
78-87-5	1,2-Dichloropropane	< 5
108-67-8	1,3,5-Trimethylbenzene	< 5
541-73-1	1,3-Dichlorobenzene	< 5
142-28-9	1,3-Dichloropropane	< 5
106-46-7	1,4-Dichlorobenzene	< 5
594-20-7	2,2-Dichloropropane	< 5
95-49-8	2-Chlorotoluene	< 5
106-43-4	4-Chlorotoluene	< 5
71-43-2	Benzene	< 5
108-86-1	Bromobenzene	< 5
74-97-5	Bromochloromethane	< 5
75-27-4	Bromodichloromethane	< 5
75-25-2	Bromoform	< 5
74-83-9	Bromomethane	< 10
56-23-5	Carbon Tetrachloride	< 5
108-90-7	Chlorobenzene	< 5
75-00-3	Chloroethane	< 10
67-66-3	Chloroform	< 5
74-87-3	Chloromethane	< 10
156-69-4	cis-1,2-Dichloroethene	< 5
10061-01-5	cis-1,3-Dichloropropene	< 5
124-48-1	Dibromochloromethane	< 5

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*William M. Seymour*

William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference #: 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C.#1

Report Date: 11/08/1990

Matrix: WATER

Lab Sample ID: 3555-101

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g/L}$ )
74-95-3	Dibromomethane	< 5
75-71-8	Dichlorodifluoromethane	< 5
100-41-4	Ethylbenzene	< 5
87-68-3	Hexachlorobutadiene	< 5
98-82-8	Isopropylbenzene	< 5
75-09-2	Methylene Chloride	< 5
91-20-3	Naphthalene	< 5
104-51-8	n-Butylbenzene	< 5
103-65-1	n-Propylbenzene	< 5
99-87-6	p-Isopropyltoluene	< 5
135-98-8	sec-Butylbenzene	< 5
100-42-5	Styrene	< 5
98-06-6	tert-Butylbenzene	< 5
127-18-4	Tetrachloroethene	< 5
108-88-3	Toluene	< 5
540-59-0	trans-1,2-Dichloroethene	< 5
10061-02-6	trans-1,3-Dichloropropene	< 5
79-01-6	Trichloroethene	< 5
75-69-4	Trichlorofluoromethane	< 10
75-01-4	Vinyl Chloride	< 10
133-02-7	p-Xylene/m-Xylene (total)	< 5
133-02-7	o-Xylene	< 5
79-34-5	1,1,2,2-Tetrachloroethane	< 5

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*lws*  
William M. Seymour, QA Manager

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. #1 DUPLICATE

Report Date: 11/08/1990

Matrix: WATER

Lab Sample ID: 101 DUP

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g/L}$ )
630-20-6	1,1,1,2-Tetrachloroethane	< 5
71-55-6	1,1,1-Trichloroethane	< 5
79-00-5	1,1,2-Trichloroethane	< 5
75-34-3	1,1-Dichloroethane	< 5
75-35-4	1,1-Dichloroethene	< 5
593-58-6	1,1-Dichloropropene	< 5
87-61-6	1,2,3-Trichlorobenzene	< 5
96-18-4	1,2,3-Trichloropropane	< 5
120-82-1	1,2,4-Trichlorobenzene	< 5
95-63-6	1,2,4-Trimethylbenzene	< 5
106-93-4	1,2-Dibromoethane	< 5
96-12-8	1,2-Dibromo-3-chloropropane	< 5
95-50-1	1,2-Dichlorobenzene	< 5
107-02-2	1,2-Dichloroethane	< 5
78-87-5	1,2-Dichloropropane	< 5
108-67-8	1,3,5-Trimethylbenzene	< 5
541-73-1	1,3-Dichlorobenzene	< 5
142-28-9	1,3-Dichloropropane	< 5
106-46-7	1,4-Dichlorobenzene	< 5
594-20-7	2,2-Dichloropropane	< 5
95-49-8	2-Chlorotoluene	< 5
106-43-4	4-Chlorotoluene	< 5
71-43-2	Benzene	< 5
108-86-1	Bromobenzene	< 5
74-97-5	Bromochloromethane	< 5
75-27-4	Bromodichloromethane	< 5
75-25-2	Bromoform	< 5
74-83-9	Bromomethane	< 10
56-23-5	Carbon Tetrachloride	< 5
108-90-7	Chlorobenzene	< 5
75-00-3	Chloroethane	< 10
67-66-3	Chloroform	< 5
74-87-3	Chloromethane	< 10
156-69-4	cis-1,2-Dichloroethene	< 5
10061-01-5	cis-1,3-Dichloropropene	< 5
124-48-1	Dibromochloromethane	< 5

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*William Seymour*  
William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C. #1 DUPLICATE

Report Date: 11/08/1990

Matrix: WATER

Lab Sample ID: 101 DUP

CAS NO.	COMPOUND	RESULTS ( $\mu\text{g/L}$ )
74-95-3	Dibromomethane	< 5
75-71-8	Dichlorodifluoromethane	< 5
100-41-4	Ethylbenzene	< 5
87-68-3	Hexachlorobutadiene	< 5
98-82-8	Isopropylbenzene	< 5
75-09-2	Methylene Chloride	< 5
91-20-3	Naphthalene	< 5
104-51-8	n-Butylbenzene	< 5
103-65-1	n-Propylbenzene	< 5
99-87-6	p-Isopropyltoluene	< 5
135-98-8	sec-Butylbenzene	< 5
100-42-5	Styrene	< 5
98-06-6	tert-Butylbenzene	< 5
127-18-4	Tetrachloroethene	< 5
108-88-3	Toluene	< 5
540-59-0	trans-1,2-Dichloroethene	< 5
10061-02-6	trans-1,3-Dichloropropene	< 5
79-01-6	Trichloroethene	< 5
75-69-4	Trichlorofluoromethane	< 10
75-01-4	Vinyl Chloride	< 10
133-02-7	p-Xylene/m-Xylene (total)	< 5
133-02-7	o-Xylene	< 5
79-34-5	1,1,2,2-Tetrachloroethane	< 5

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William M. Seymour, QA Manager

VOA Report (Page 1 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference # 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C.#1 SPIKE

Report Date: 11/08/1990

Matrix: WATER

Lab Sample ID: 101-SPK

CAS NO.	COMPOUND	RECOVERY
630-20-6	1,1,1,2-Tetrachloroethane	109 %
71-55-6	1,1,1-Trichloroethane	95 %
79-00-5	1,1,2-Trichloroethane	99 %
75-34-3	1,1-Dichloroethane	95 %
75-35-4	1,1-Dichloroethene	89 %
593-58-6	1,1-Dichloropropene	95 %
87-61-6	1,2,3-Trichlorobenzene	113 %
96-18-4	1,2,3-Trichloropropane	113 %
120-82-1	1,2,4-Trichlorobenzene	111 %
95-63-6	1,2,4-Trimethylbenzene	99 %
106-93-4	1,2-Dibromoethane	99 %
96-12-8	1,2-Dibromo-3-chloropropane	116 %
95-50-1	1,2-Dichlorobenzene	104 %
107-02-2	1,2-Dichloroethane	102 %
78-87-5	1,2-Dichloropropane	90 %
108-67-8	1,3,5-Trimethylbenzene	96 %
541-73-1	1,3-Dichlorobenzene	102 %
142-28-9	1,3-Dichloropropane	101 %
106-46-7	1,4-Dichlorobenzene	97 %
594-20-7	2,2-Dichloropropane	103 %
95-49-8	2-Chlorotoluene	102 %
106-43-4	4-Chlorotoluene	98 %
71-43-2	Benzene	101 %
108-86-1	Bromobenzene	98 %
74-97-5	Bromochloromethane	93 %
75-27-4	Bromodichloromethane	92 %
75-25-2	Bromoform	100 %
74-83-9	Bromomethane	113 %
56-23-5	Carbon Tetrachloride	96 %
108-90-7	Chlorobenzene	93 %
75-00-3	Chloroethane	96 %
67-66-3	Chloroform	94 %
74-87-3	Chloromethane	118 %
156-69-4	cis-1,2-Dichloroethene	97 %
10061-01-5	cis-1,3-Dichloropropene	100 %
124-48-1	Dibromochloromethane	99 %

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William M. Seymour, QA Manager

VOA Report (Page 2 of 2)  
(Volatile Organic Analysis)

Attn: Mr. Q. T. Morphis  
Tri-State Testing &

Lab Reference #: 3555

Date Received: 10/25/1990

Customer Sample Ref:  
L.C.#1 SPIKE

Report Date: 11/08/1990

Matrix: WATER

Lab Sample ID: 101-SPK

CAS NO.	COMPOUND	RECOVERY
74-95-3	Dibromomethane	96 %
75-71-8	Dichlorodifluoromethane	101 %
100-41-4	Ethylbenzene	97 %
87-68-3	Hexachlorobutadiene	98 %
98-82-8	Isopropylbenzene	97 %
75-09-2	Methylene Chloride	102 %
91-20-3	Naphthalene	102 %
104-51-8	n-Butylbenzene	98 %
103-65-1	n-Propylbenzene	96 %
99-87-6	p-Isopropyltoluene	96 %
135-98-8	sec-Butylbenzene	98 %
100-42-5	Styrene	98 %
98-06-6	tert-Butylbenzene	102 %
127-18-4	Tetrachloroethene	101 %
108-88-3	Toluene	96 %
540-59-0	trans-1,2-Dichloroethene	87 %
10061-02-6	trans-1,3-Dichloropropene	98 %
79-01-6	Trichloroethene	92 %
75-69-4	Trichlorofluoromethane	97 %
75-01-4	Vinyl Chloride	104 %
133-02-7	p-Xylene/m-Xylene (total)	100 %
133-02-7	o-Xylene	100 %
79-34-5	1,1,2,2-Tetrachloroethane	109 %

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*William Seymour*  
William M. Seymour, QA Manager

**LABORATORY REPORT**

Attn: Mr. Q. T. Morphis

Tri-State Testing &

Lab Reference # 3555

Sample Received: 10/25/1990

Report Date: 11/12/1990

Sample Matrix: WATER

Sample ID	Analysis	Results
L.C.#2	VOA	Attached

**Site No. TND 003328960**  
**Ref. No.       50**

PAGE ①

②

LANDES CO. S.I.

33-633

SITE 8:15 AM 2-7-94 (MON)

Craig Standard (CSS)

Curt Spaeth (CLS)

Don VanHoeck (DV)

CLEAR SKY DUE TO

BESTFUL BREEZE SW

SLIGHT BREEZE

30°F

EVERY ONE FEELS JUST DIFFERENT

CSS AND ANOTHER OPEN (OPEN GOLF)

STABLE TIME

3301 IS LOOKING

CLS IS THE BACKUP

WINDS ARE 10 MPH

CSS IS STABLE

AREA IS WET, SOFT BRUSH

GRADING UNITS

RIGHT CSS SLOWLY 50-60

BY DV CLS SLOWLY

BRUMLEY SILT SOIL

100 METERS

2-7-94

Don VanHoeck

(2)

SAMPLE QUANTITY TAKEN:

16 oz METALS CYANIDE

16 oz ORGANIC EXTRINIC

4 oz ORGANIC VOLATILE

SEDIMENT SAMPLE NO. 1, NO FILTER

LOCATION: ~300' FROM

WILSON RD

~600 FEET LONG

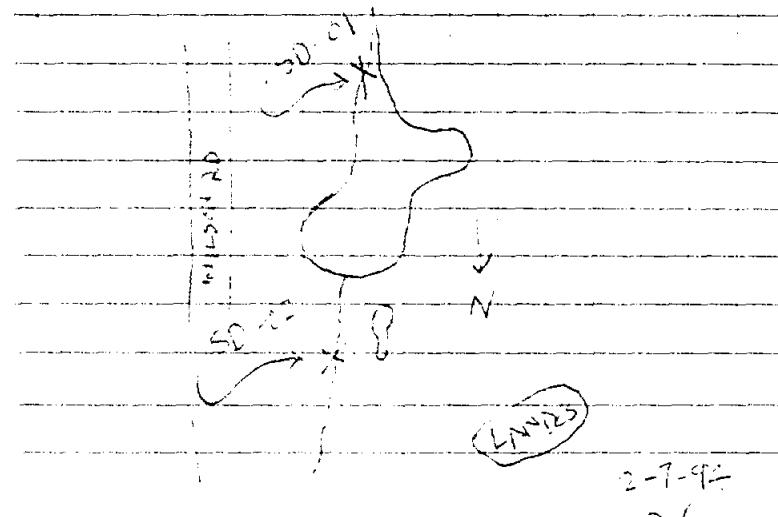
IRRIGATION LINE

8:55

LC-SD-CZ

SEDIMENT SAMPLE NO. 2

RUN OFF CHANNEL



(3)

### CDS DIGGING & SAMPLING

MOIST  
WET RED BROWN CLAY

LEADS TO C.M.

TOP DEPTH = 4"

NEAR SMALL PIECE OF IRON

WOOD, METAL DEBRIS

SOIL IS SEDIMENT IN A PAN

BY DV SAMPLE HOLE 1/2 SHOVEL

CDS (LEGITIMATE)  
LUGG

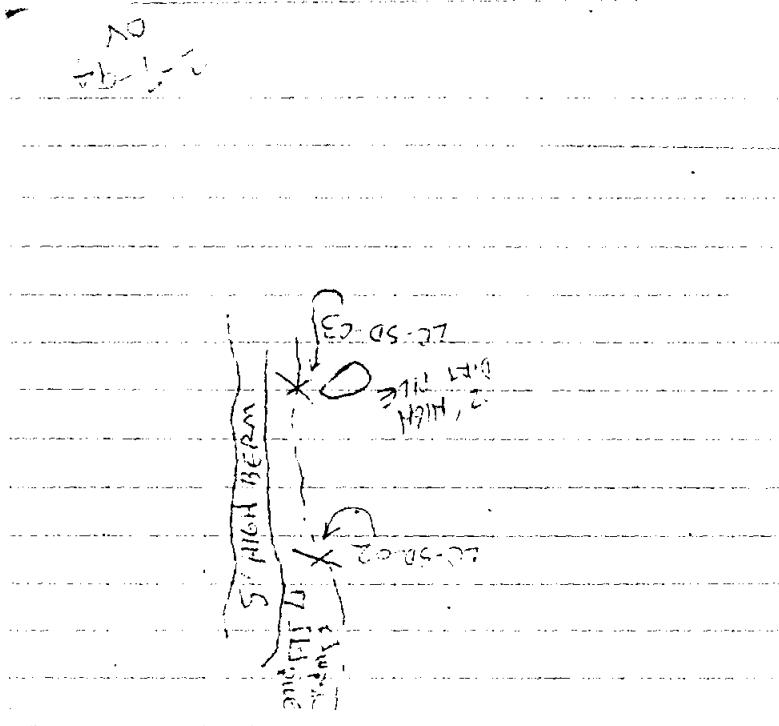
WOODEN AREA ~ 200' x 200'

WILSON ROAD, MUNICIPALITY OF

PROPERTY

SOIL SURFACE IS CONCRETE

2-7-97  
DV



APR 26 1962 2-42

81 DV

PICTURE NO. 3 = FISHING ON THE RIVER SIDE

PICTURE NO. 3

FISHING ON THE RIVER SIDE

NEAR PORT OF DAWRA DIFT. 2000

SCENE OF RIVER SIDE

UPPER RIVER SIDE WETLANDS

C32 PICTURES

416am 5th May 1962

(4)

BY DV

(5)

8:50 - PLOT #4 CJS BY VDV

RF TRACKS IN FOREGROUND

SCHOOL IN BACKGROUND ACROSS

WILSON RD FROM LANDS CO

10:00 AM

CJS SAMPLING LC-55-01

RED BROWN CLAY

GRASSY AREA

SOME SMALL PINES NEAR

2" SAMPLE DEPTH

PLOT #5 CJS SAMPLES

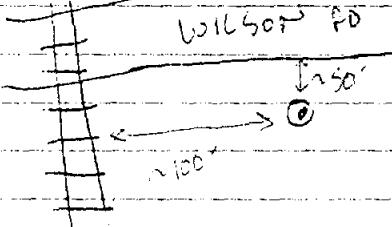
BY DV CJS FILLS OUT TAGS

LOOKING W, LOOKOUT MTN. IN  
BACKGROUND

~50' FROM WILSON RD

100' FROM RF TRACKS

WITHIN 200' OF SCHOOL



A TRIP CAME BY OR TURNS

QJ

(6)

10:15 AM

LC - SD - 04

UPGRADIENT SEDIMENT SAMPLE  
IN DRAINAGE DITCH THAT- DRAINS CHATTANOOGA COKE PROPERTY  
DEPTH = 1"

34 W PICT # G CSS SAMPLING

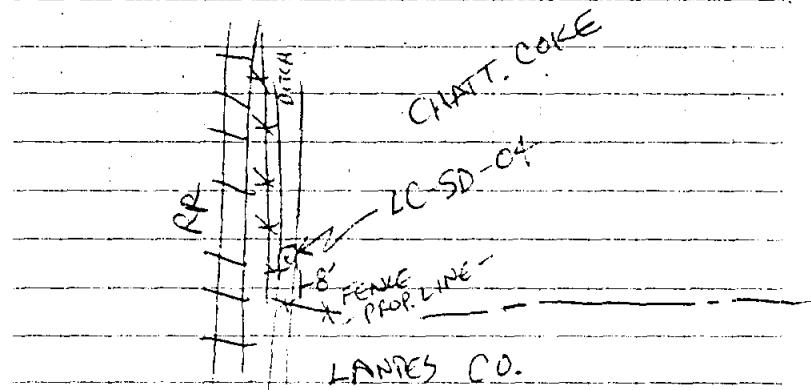
DOWNED FENCE BEHIND IS PROPERTY LINE  
LANDES CO. - BUILDING IS TO REAR

BLACK COARSE SEDIMENT

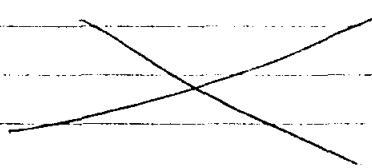
NO ~~COR~~ ODOUR

SOME OILY SHEEN IN DITCH

STANDING WATER

2-7-94  
D✓

NO  
44-1-2



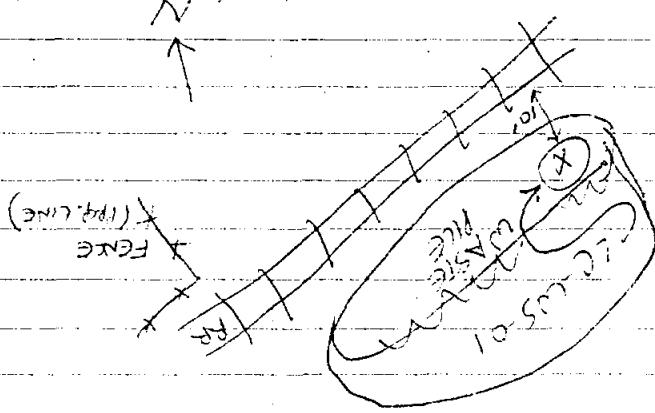
**BLACK BEFFI BUSINESSES** GROUP 6 ON THE PRICE

LLANFEST CO. IN BUCKLEHORN

CS SUPERVISOR

PICT #7: C3S - Sampling

1



LASTE FILE (OLE DEBES, COPL, CINDCPS)

10:40 10-S-01 SAMPLING LC-CGS

(e)

10:50 AM

CJS SAMPLES LC-WS-02

BROWN STAINED SAND

GRAVEL ON TOP

NO ODOR

2" INTO WASTE PILE

ON SIDE OF PILE

BY DR

PICT #8 CJS SAMPLING WASTE PILE  
LC-WS-02

CJS NEAR BY

LANES, CHATT COKE IN BACKGROUND

11:05 AM

CJS SAMPLES LC-WS-C3

DEPTH = 2"

GREY SANDY MATERIAL

Pieces of covered shredded wires

ON TOP OF WASTE PILE

BIG CHUNKS OF MECHED DOWN

SCRAP METAL AROUND WASTE PILE

PICT. #9 CJS SAMPLING LC-WS-C3

BY DR 80' EAST OF LC-WS-02

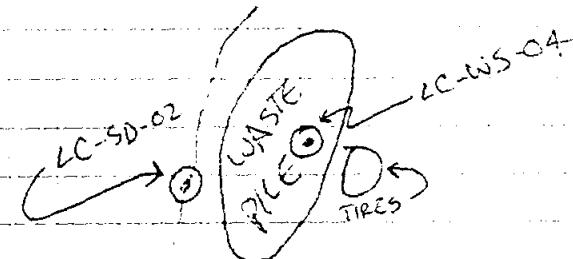
2-7-94  
DV

(7)

11:25 AM CJS SAMPLES LC-WS-04  
IN JUNK PILE

BS PICT. #10 - CJS SAMPLING WS-04  
DEPTH = 1 "

EMPTY BARRELS, WOOD PALCED, GARBAGE  
IN PILE. MATERIAL IS RED BROWN CLAY  
JUST UPSLOPE FROM LC-SD-02 ~30' WEST  
A DRUM NEARBY SAYS "NICKEL OXIDE"



A LABEL ON WASTE PILE  
SAYS "CFC FABRICATION CORP."

12 PM WENT TO LUNCH:

LOTS OF CHICKEN AT "LICK SKILLET" BUFFET

DV ATE MORE THAN ANYONE ELSE

CJS DID NOT EAT TOO MUCH

FOOD WAS GOOD BUT EXPENSIVE \$6

2-7-94  
D.V.

10

1-10

## CJS SAMPLES LC-SS-OS

FROM SOIL IN MIDDLE OF  
WASTE PILES. THIS IS DOWN ROAD  
DARK  
YELLO  
BROWN SANDY CLAY HAS SOME FOUNDRY  
SAND MIXED IN WITH IT.

DEPTH IS 1"

PICT #11 - CJS : CLS SAMPLING LC-SS-OS  
CANDES IN BACKGROUND, LOOKOUT MTN.  
IN BACKGROUND : LOOKING NW

1-10

## CJS SAMPLES LC-SS-OB

THIS IS A DUPLICATE SAMPLE  
OF LC-SS-OS  
SAME LOCATION  
SAME DEPTA

PICT #12 : DV REVIEWING SITE DATA  
BY CLS

1-7-14  
DV

1:00pm

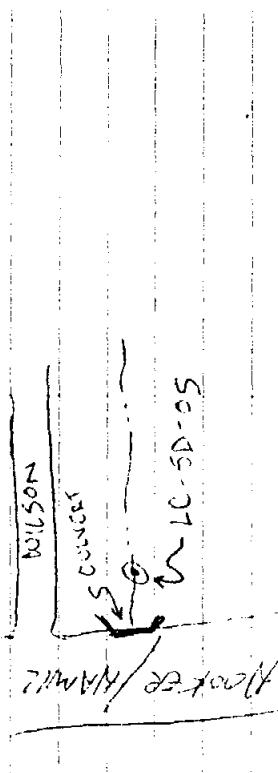
CSS SAMPLES LC-SD-05

SAMPLE DEPTH 2" SEDIMENT IS SATURATED WITH WATER  
THIS IS A CREEK DRAINING  
LANDES SITE. FLOW IN DITCH  
IS APPROXIMATELY 1 CFS

STRANGE WHITE BACTERIAL SCUM  
GROWING ON SEDIMENT  
CAN SMELL VOLATILES IN DITCH  
DITCH IS ABOUT 8' DEEP  
WATER APPROX 3" DEEP  
→ ABOUT 20' WIDE / DITCH  
ABOUT 4' WIDE (STREAM)

BLACK BROWN SAND / LOAM / ORGANIC MATTER

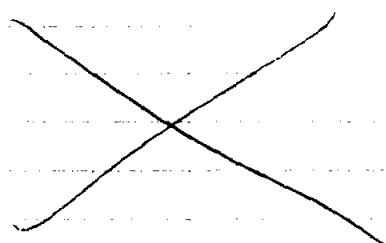
SAMPLE 20' FROM HOOKER / HAMIL RIVER



DITCH #13: CSS SAMPLING

27-94  
CATCHMENT STREAM SURFACES  
SEDIMENT IN BACKGROUND

DA  
2-7-94



MSA will continue main  
cycle AND OUT THE  
EUPH ONE THEN CALL IT  
A DAY AND CRAIG WENT  
ROCK CLIMBING

NASHVILLE LAB FOR OPERATIONAL ANALYSIS  
KNOXVILLE LAB FOR OPERATIONAL ANALYSIS

THEY WERE DELIVERED TO  
FROM THIS DROP OFF LOCATION  
TO GREYHOUND BUS STATION  
ALL OF THE DAY'S SAMPLES  
THE TRIO TRANSFERRED

3:00

(12)

(13)

FEbruary 8, 1994

8:30

AT SITE. VERY CLOUDY,  
AM LIGHT RAIN, AND ~60°F.  
TYPICAL CHATTANOOGA WEATHER.  
THOSE INVOLVED WITH THE  
SAMPLING EVENTS FOR THE DAY  
ARE: CRAIG STANDARD (CSS)  
CURT SPATA (CSS)  
DON VANHOEK (DV)

SOME PEOPLE WE'RE  
WORKING ON W END  
OF PROPERTY. THEY  
DIDN'T VISIT US WHILE  
WE ARRIVED

2-8-94  
DV

9:00

DON VANNUCK

AM SAMPLE LC-55-02

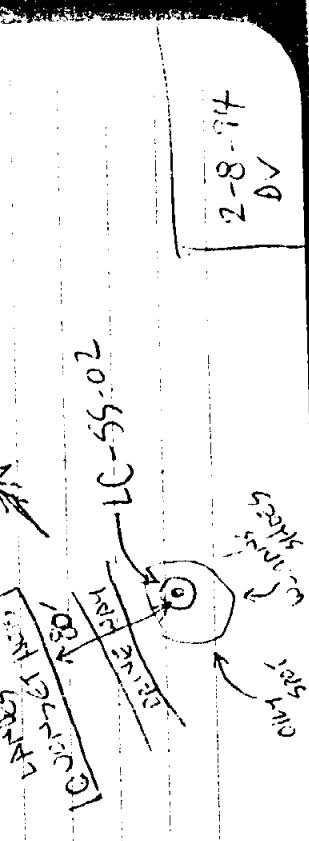
TAKEN FROM OILY GROUND

NO GRASS IS GROWING HERE  
AREA IS WET WATER FILLED

HOLE WHICH TAKING SAMPLE  
MATERIAL WAS BLACK SAND/CLAY MIX  
SAMPLE HAD PETROLEUM OIL, SPITTLE  
DEPTH: -2-

LOCATION TO EAST OF ASSMBLY  
BLDG. BLDG. BLDG. & RR

Photo #14 - CTS took photo  
looking South at DV collecting  
sample # LC-55-02  
CTS is also in photo

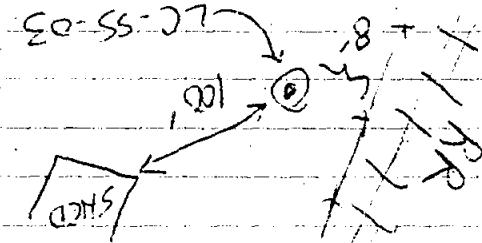


2-8-74  
DV

(14)

2-8-94

Plane 15, 16 Take by CCS



METALLIC PIECES. SPMCS 0274=2

SAMPLE WAS SANDPAPER

NOTS & BLOCKS ON SURFACE

NO REACTION, OIL STAINING

METALLIC IS IN PLCA OF

SPMCS LC-SS-03

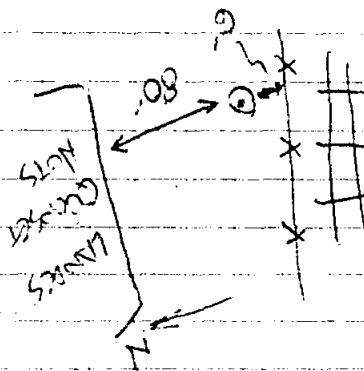
CRAIG STRAINING

9:10

(15)

Z-8-94  
DV

SAMPLING CHAMBERS CO. IN BLACK & DECKER  
Frame # 11: TACN B1 C3S OF C2S



SAMPLE COUNT = 2

SILTY SANDY / GRAY MIX

BROWN, TAN, OLIVE MIX

MATERIAL: BLACK, GREY, DARK PEL

IRRIGATING CAT, VERY COARSE

NO SELECTATION AT BASE OF

SAMPLE TAKEN IN AREA OF

LC-SS-Q4

CURT SPRETA  
9:20 AM  
SAMPLCS

FILED) DANCE COMPILE  
CDS DANCE COMPILATION  
TAKE TO CZECHKNUO  
DECIDUOUS TO APPROXIMATE  
START LAB.

AM [10:00]  
FLR TOLPA'S SAMPLES  
TAKE TO CZECHKNUO  
BUS STATION FEP  
DECIDUOUS TO APPROXIMATE  
START LAB.

**Site No. TND 003328960**  
**Ref. No. 51**

**(PHOTOGRAPHS, SEE APPENDIX D)**

**Site No. TND 003328960**  
**Ref. No. 52**

**(ANALYTICAL DATA SHEETS, SEE APPENDIX B)**

Site No. TND 003328960  
Ref. No. 53

Date: March 18, 1994

To: The Landes Co. Site File, #33-633

From: Craig Stannard, Geologist, TDSF

Subject: The Landes Co. Site

CJS telephoned the Lawyers Title and Escrow Co. (phone: 756-4154) and spoke with attorney Robert Brown on 1/31/94. Mr. Brown mentioned several facts about the Landes Company site. The site is watched at night by a maintenance/security man who stays in the trailer at the northeast corner of the site. A lot of theft has occurred on the site. Woodbridge Foam Fabricating and Formco of Tennessee no longer use the site.

The assembly building at the site is currently being used by the Signet Contracting Company for the storage of packaged pipe insulation products. The pan building is currently being used by Simmons Demolition to store a backhoe and trucks. The Winton Company uses the site for its truck repair business.

**Site No. TND 003328960**

**Ref. No.       54**

PRELIMINARY ASSESSMENT

NARRATIVE REPORT

LANDES COMPANY

CHATTANOOGA, TENNESSEE

CERCLIS No. TND 003328960

TENNESSEE FILE No. 33-633

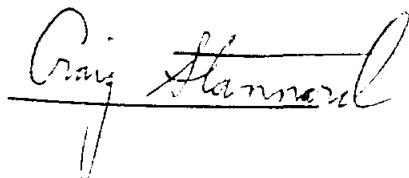
Prepared for the  
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DIVISION OF SUPERFUND  
in cooperation with  
WASTE MANAGEMENT DIVISION  
U.S. ENVIRONMENTAL PROTECTION AGENCY

DATE: April 26, 1993

Prepared By  
Craig Stannard

Reviewed By  
Wayne Everett

Approved By  
Nancy Thomas

  
Craig Stannard

**Site No. TND 003328960**  
**Ref. No. 55**

Friday  
December 14, 1990

---

**Part II**

---

**Environmental  
Protection Agency**

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**40 CFR Part 300**  
**Hazard Ranking System; Final Rule**

**Site No. TND 003328960**

**Ref. No. 56**

STUDY PLAN  
SITE INVESTIGATION

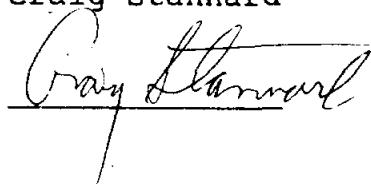
SITE NAME: Landes Company  
SITE LOCATION: Chattanooga, TN  
EPA ID#: TND003328960  
TN-DSF FILE #: 33-633

Prepared for the  
TENNESSEE DIVISION OF SUPERFUND  
in cooperation with  
WASTE MANAGEMENT DIVISION  
U.S. ENVIRONMENTAL PROTECTION AGENCY

DATE: December 17, 1993

Prepared By

Craig Stannard



Reviewed By

Wayne Everett

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Approved By

Nancy Thomas

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STUDY PLAN  
SITE SCREENING INVESTIGATION

Site Name: Landes Company  
Location: Chattanooga, TN  
EPA ID#: TND003328960

1.0 INTRODUCTION

The Tennessee Division of Superfund has been tasked by the U.S. Environmental Protection Agency (EPA), Waste Management Division to conduct a site investigation (SI) at the above described site. This investigation will be conducted pursuant to the authority and requirements of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), Public Law 196-510; Section 104; and the Superfund Amendments and Reauthorization Act (SARA), Public Law 99-499.

1.1 Objectives

The objectives of this sampling investigation are to collect information to assist in developing a site-specific preliminary HRS score and to determine if further investigation is required at this site.

Specific elements are:

- Characterize the history, location, and nature of past hazardous disposal activity on the site;
- Obtain information to prepare a preliminary HRS score;
- Provide EPA the necessary information to make decisions on any other actions warranted at the site.

1.2 Scope of Work

The scope of this investigation will include the following activities:

- Obtain and review background materials relevant to HRS scoring of site;
- Obtain aerial photographs and maps of site, if possible;
- Obtain information on local water systems;

- Evaluate target population within a 4-mile radius of the site with regard to groundwater use, surface water use, airborne exposure and possibility of direct contact or fire and explosion hazard;
- Determine location and distance to nearest potable well;
- Develop a detailed site sketch drawn to scale;
- Collect environmental samples consisting of soil, sediment, and waste samples.

#### 1.3 Schedule

The deadline for the Landes Company Site SI submittal is April 1, 1994. The sampling investigation is scheduled for February 7, 1994. The sampling event is expected to take 2 to 3 days.

#### 1.4 Personnel

The sampling investigation will be conducted by the following TDSF personnel:

Craig Stannard, Geologist;

Don VanHook, Environmental Specialist;

Curt Spaeth, Environmental Specialist;

Craig Stannard is the designated lead/project manager for this site.

#### 1.5 Permit and Authorization Requirements

Contact must be made with Investment Properties Company, the owner of the site. Lawyers Title and Escrow, Inc. is the legal representative for the Investment Properties Company. Their phone number is (615) 756-4154. Their address is:

Lawyers Title and Escrow, Inc.  
737 Market Street, Suite 400  
Chattanooga, Tennessee 37402

The official contact at Lawyers Title and Escrow, Inc. for the Investment Properties Company is attorney, Robert Brown. Mr. Brown will be notified of the official sampling dates and offered the opportunity to split samples.

## 1.6 Site History and Description

### 1.6.1 Site Location

The above referenced site is located at 314 Hooker Road in Chattanooga, Hamilton County, Tennessee. The site is in an industrial/commercial/residential area. The site is bounded on the north by Hooker Road, on the east by Wilson Road, on the west by parcels owned by SMC Industries, Mid South Saw and Grinding, and the Chattanooga Coke and Chemical Corporation. A parcel of land owned by Velsicol Chemical Corporation bounds the site to the south. The Chattanooga Coke and Chemical Corporation, Residue Hill, and the Morningside Chemical Company are the closest Superfund sites to the Landes Company site. The Piney Woods Elementary School is located within 200 feet of the southeast corner of the site property. The geographic coordinates of the site are latitude  $34^{\circ} 59' 43''$  north and longitude  $85^{\circ} 18' 30''$  west. The site is found on the U.S.G.S. Quadrangle: Fort Oglethorpe, Georgia-Tennessee, 1982 (Figure 1).

### 1.6.2 Site Description

The site is located in a low lying area approximately 1/4 mile west of Chattanooga Creek. The site is rectangular in shape and approximately 17 acres in size (Figure 2). The site is relatively flat. There is topographic relief of less than 10 feet across the site. There are 6 industrial buildings and 2 trailers on the site. There are 6 shallow monitoring wells on the site. The site is currently being used by Woodbridge Foam Fabricating, Inc. for the storage of foam rubber scraps and by Formco of Tennessee for the rental of concrete forms and scaffolding.

Approximately 90% of the site (that portion of the site containing buildings) is surrounded by a tall, chain-link, barbed-wire fence. There are two gates in the fence along Hooker Road and one in the fence along the southern perimeter. The site is not guarded and the two gates along Hooker Road are open during business hours. There are holes in the fence at the rear (south) side of the property. An active railroad line, which serves some of the industries in the area, crosses the southeast corner of the site. The southeast corner of the site is unfenced and access is unrestricted. This area contains the illegal dump described below in Section 1.6.3. A small wetland area lies on the site property adjacent to the dump. An unnamed blueline stream starts in this wetland, crosses under the railroad track, and flows northward across the east side of the Landes Company site. A ditch parallels the railroad track and enters the stream at the point where the stream crosses the track. The ditch drains almost none of the Landes Company site. It does, however, drain the Velsicol and Chattanooga Coke Superfund sites to the south and west.

Water in the ditch frequently has a sheen and the soil in the ditch appears to be discolored and contaminated. The fenced portion of the site is drained via a series of storm drains and ditches which run parallel to the buildings. The storm drains enter the stream on the east side of the site.

#### 1.6.3 Site History

Industrial/commercial activity has occurred at the site since 1947. Most of the businesses active at the site during this time have been engaged in metal fabrication and in the rental and manufacturing of concrete forms and scaffolding. In June 1981, the Tennessee Division of Water Pollution Control inspected the facility and found it to be discharging raw sewage, shop oils, and sludges into surface drainage ditches and storm drains emptying into Chattanooga Creek. Concrete Forms Corporation (CFC), operating at the Landes Company site at that time, was issued a Notice of Violation. In 1983, CFC connected to the Chattanooga municipal sewer system.

In May 1990, the Tennessee Division of Solid Waste Management (TDSWM) received an anonymous complaint concerning the improper disposal at the Landes Company site of paints, paint thinners, concrete cleansers, and other assorted wastes used in the manufacturing process. Allegedly, these substances were periodically poured onto the ground at the site. The TDSWM investigated the complaint and discovered an illegal on-site dump at the southeastern corner of the site where several kinds of hazardous industrial wastes and chemicals were identified. The list included small containers of oil, several gallons of paint, several gallons of roofing cement, a 15-20 gallon container of concentrated ammonium hydroxide (pH 13.6), and a 5 gallon container of a substance listed as industrial pan handler. The illegal dump also contained piles of foundry sand, separator sludge, baghouse dust, and shredder fluff. Samples of foundry sand were collected and found to contain hazardous quantities of lead. The TDSWM cited the facility with several Notices of Violation, from June 1990 until January 1991, for the improper storage and disposal of hazardous waste containers. Superfund's contractor, Ferguson Harbor Service, Inc., overpacked the various containers and moved them to an on-site paint shed.

The actual manufacturing and metal fabrication of concrete forms and scaffolding ended at the site in 1991. In April 1992, the TDSWM forced Hydro-Vac Services, Inc. to remove the latex sludge it had been storing at the site. The latex sludge was being stored in the pan building and there was evidence at the time that some of the sludge had leaked from the building into a stormwater drainage system leading to Chattanooga Creek. Today, the Landes Company site is used for the warehousing of foam rubber scraps by Woodbridge Foam

Fabricating, Inc. and it is used as the location for a small concrete forms and scaffolding rental business that is operated out of two trailers at the northeast corner of the site (Formco of Tennessee).

Tri-State Testing and Drilling completed a Phase 2 environmental assessment of the site property on December 19, 1990. Analytical results for surface soil, subsurface soil, and groundwater samples collected during this investigation showed the presence of both organic and inorganic hazardous substances on the site.

A Site Discovery was completed on the site on October 8, 1991. A Preliminary Assessment report was completed on the Landes Company site on April 28, 1993.

### 1.7 Site Geohydrology

Soil borings conducted in conjunction with the Phase 2 environmental assessment show that the site is underlain, from the surface down, with fill material, residual clay, and limestone and dolomite bedrock.

The fill material varies from 2 feet to about 10 feet in thickness and generally consists of various shades of brown and grey silty to sandy clay containing crushed stone, gravel, and rock fragments. The fill material ranges from soft to stiff in consistency with a relatively moderate coefficient of permeability.

The residual clay underlying the fill material is derived from the weathering of the subadjacent limestone and dolomite bedrock. The residual clay is reddish-brown, silty, and contains chert fragments. It ranges from firm to very stiff in consistency with a relatively low coefficient of permeability.

The bedrock underlying most of the site is the Chickamauga Limestone. The Chickamauga Limestone is a light-gray, fine-to-coarse grained, thin-to-thick bedded limestone unit that is 1000 to 1500 feet thick. The Chickamauga Limestone is a karst unit. The Chickamauga Limestone has no significant confining layers. Groundwater occurs along joints, fractures, and bedding planes that have been enlarged through chemical weathering. Well yields are highly variable.

The northeast corner of the site is underlain by the Knox Group. The Knox Group consists of dolomite that is very siliceous, light- to dark-gray, fine- to coarse-grained, and thin- to thick-bedded. The Knox Group is approximately 2600 feet thick and has no significant confining layers. It is karst and groundwater occurs within the Knox in the same way it does in the Chickamauga Limestone. The Knox Group

dolomite is separated from the Chickamauga Limestone by a major thrust fault that cuts diagonally across the northeast corner of the site.

Groundwater exists under water table conditions at the site at depths ranging from 1 to 9 feet below the ground surface. The aquifer of concern is the Chickamauga Limestone. The groundwater gradient at the site is to the north towards Chattanooga Creek. Recharge to the aquifer is derived from precipitation at the site and on higher areas to the west. Discharge is via seeps and wells. Analytical data from monitoring wells on the site and from monitoring wells upgradient of the site indicates that groundwater both at the site and in the surrounding area is contaminated with hazardous substances.

## 2.0 SAMPLING INVESTIGATION

### 2.0.1 Rationale

This investigation will address the threat to pathway targets from existing site contamination. Sample data and documentation exists showing that hazardous substances are present on the site. The illegal dump, waste piles, and contaminated soil are potential sources of contamination.

The greatest health risk from on-site contamination appears to be by way of the surface water human food chain exposure pathway. Chattanooga Creek, just downgradient from the site, is a fishery. An environmental threat may also exist for a small wetland habitat located at the southeast corner of the site. Sediment samples will be collected both up and downgradient of the site and within the wetland itself.

Soil exposure appears to be a significant pathway of concern for on-site workers. Soil samples will be taken in areas of most probable contamination based on past site sampling analytical data and investigations. The primary areas of focus will be the illegal dump at the southeastern corner of the site and the areas surrounding the main building. The threat to nearby residential properties is not considered to be significant as there are no residences within 200 feet of the site property. The site is relatively secure against trespass and it is not aesthetically pleasing. In addition, the Piney Woods Elementary School is greater than 200 feet from any known potential on-site sources. Neither the school property nor any nearby residential property will be sampled.

Solid waste samples will be collected from waste piles in the illegal dump area.

Groundwater is not used for drinking water purposes within the 4-mile site radius. Therefore, though monitoring wells exist on the site, they will not be sampled.

There is no documentation to suggest that particulate or gaseous releases to the air are, or ever were, of any significant concern at the site. Air sampling will, therefore, not be conducted.

#### 2.0.2 Parameters

The full Superfund scan of lab tests will be requested: Volatile organics, BNA extractable organics, pesticides, PCBs, total metals, and cyanide. Sampling will be performed as per specifications in EPA's Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual (Feb. 1, 1991). Sampling and testing will follow all EPA standards, methodologies, and protocols.

#### 2.1 Surface Soil Sampling

A total of six (6) surface soil samples, including one (1) background surface soil sample and one (1) duplicate surface soil sample, will be collected at depths ranging from 0-to-2 feet. Exact depth of samples will be determined in the field based on a soil horizon profile examination by the investigation team. Of the 6 samples, one (1) sample (background) will be collected within the east central portion of the site, two (2) samples, one of which will be a duplicate, will be collected within the illegal dump area, and three (3) samples will be collected near the main building and east of the paint shed in areas of suspicious discoloration and possible vegetative stress. All samples will be grab. Sample codes and descriptions are listed in Table 2. Sample locations are depicted in Figure 3.

#### 2.2 Surface Water and Sediment Sampling

Surface water will not be sampled in this Site Investigation. Meaningful data concerning the potential risk posed to targets is not expected to be gained from the analysis of surface water samples.

Five (5) sediment samples will be collected. Of the 5 sediment samples, one (1) background sediment sample will be collected in the wetland at its southern (upgradient) extremity, one (1) sediment sample will be collected within the wetland area adjacent to the illegal dump, one (1) downgradient sediment sample will be collected at the wetland's northern terminus, one (1) background sediment sample will be collected in the railroad ditch just upgradient of the site boundary, and one (1) sediment sample will be collected in the blueline stream downgradient of all

storm drains and ditches draining the potential source areas on the Landes Company site.

### 2.3 Groundwater Sampling

There are 6 monitoring wells at the site. However, groundwater contamination is not considered a viable health threat to targets within the 4-mile site radius. Groundwater will, therefore, not be sampled.

### 2.4 Waste and Leachate Sampling

Four (4) waste samples will be collected from the foundry sand/slag piles located in the illegal dump at the southeast corner of the site.

No leachate has been observed at the site and none will be sampled.

### 2.5 Proposed Sample Summary

The following table (Table 1) summarizes the total number of samples proposed for each sample matrix and the overall total number of samples proposed for this Site Investigation (SI):

TABLE 1  
PROPOSED SAMPLE SUMMARY  
LANDES COMPANY SITE INVESTIGATION

Sediment	5
Surface Soil	6
Waste	<u>4</u>
TOTAL:	15

### 2.6 Sample Coding

Samples will be coded according to EPA guidelines. Sample codes will consist of 6 characters in the following format:

Site Name - Sample Type - Sample Number

Sample types will be SS for surface soil, SD for sediment, and WS for waste.

Example:

Landes Company - Surface Soil Sample - Sample # 02.

Appropriate Code: LC-SS-02

A duplicate sample will be taken for QC purposes. This sample will be disguised and labeled the same way as the other samples.

#### 2.7 Analyses Requested /Contract Laboratory

Samples will be analyzed for extractable and purgeable organic compounds, inorganics, pesticides, PCB's, metals, and cyanide. Analyses will be performed by the Tennessee Bureau of Laboratory Services.

#### 2.8 Analytical and Container Requirements

Sample containers used will be in accordance with the requirements specified in the Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual; USEPA, Region IV, Environmental Services Division, February 1991, and the Handbook for Sampling and Sample Preservation of Water and Wastewater; EPA600/482029, September 1982. The following is a description of the analyses and types of containers required:

<u>Analysis</u>	<u>Container</u>	<u>Preservatives**</u>
Ext. Organics, Soil/Sediment/ Waste	16 oz. widemouth glass jar w/teflon liner, (1 per sample)*	None
Vol. Organics, Soil/Sediment/ Waste	4 oz., glass jar w/ Teflon liner (1 per sample)	None
Inorganics, Soil/Sediment/ Waste	8 oz. widemouth glass jar w/ Teflon liner (1 per sample)	None

\* Larger sample size requested by lab; standard is 8 oz.

\*\* All samples cooled to 4°C after collection.

#### 2.9 General Methodology

All sample collection, sample preservation, and chain-of-custody procedures used during this investigation will be in accordance with the standard operating procedures as specified in Section 3 and 4 of the Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual; USEPA, Region IV, Environmental Services Division, February 1991.

All laboratory analyses and laboratory quality assurance procedures used during this investigation will be in accordance with standard procedures and protocols as

specified in the Analytical Support Branch Operations and Quality Assurance Manual; USEPA, Region IV, Environmental Services Division; revised June 1, 1985 or as specified by the existing USEPA standard procedures and protocols for the contract analytical laboratory program.

#### 2.10 Investigation Derived Waste

Investigation derived wastes in the form of soils, sediments, etc. will be returned to the excavations from which they were collected. Any liquid wastes, such as water used to decontaminate sampling utensils, etc., will be drummed and stored on site for disposal at a later date. All investigation derived wastes will be disposed of in accordance with the requirements specified in the Management of Investigation Derived Wastes During Site Inspections, Environmental Protection Agency, May 1991.

### **3.0 FIELD HEALTH AND SAFETY PLAN**

#### 3.1 Purpose

The purpose of this safety plan is to assign responsibilities, establish personnel protection standards, establish mandatory safety operating procedures, and provide for contingencies that may arise while conducting this site screening investigation. All aspects of the field operations must comply with the USEPA "Standard Operating Safety Guides" section of Personnel Protection and Safety course manual and Occupation Safety and Health Administration regulations (29 CFR 1910.120).

#### 3.2 Site Safety Officer

The Site Safety Officer (SSO) for this site investigation is:

Craig Stannard, Geologist, TDSF.

Designated alternate SSO:

Don VanHook, Environmental Specialist, TDSF.

The site safety officer will assure that appropriate personnel protection equipment is available and properly utilized by all members of the field investigation team. He/she will also assure that proper emergency first aid equipment is available (eyewash station, first aid kit, etc.). The SSO's responsibilities will include oversight in work practices or conditions that are or may appear to be hazardous. The SSO will have ultimate authority on all safety decisions and can suspend investigation operations if required safety procedures are not followed or if conditions become too hazardous for the level of protection provided.

### 3.3 Protective Clothing

Hazards anticipated during completion of this work assignment are mainly contact. A modified Level D personnel protection will be considered appropriate for this site. The required protective equipment is:

- Steel toed boots or shoes, ANSI approved
- Overbooties
- Long pants and long-sleeved shirt
- Uncoated tyvek coveralls
- Latex surgeon's gloves
- Nitrile outer gloves
- Rubber boots for sediment sampling

### 3.4 Safety Equipment

An HNu Ultraviolet Photo-ionization Detector (HNu) will be used for air monitoring during sample collection activities.

### 3.5 Site Specific Safety Instructions

Hazards anticipated during completion of this work assignment are minimal. The nearest hospital in case of emergency is Erlanger Medical Center in Chattanooga, approximately 4 miles north of the site at 975 East 3rd Street.

## REFERENCES

1. Craig Stannard, TDSF. Preliminary Assessment Report: Landes Company Site (TND 003328960). April 28, 1993.
2. U.S. Environmental Protection Agency (EPA), Region IV. Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual. Environmental Services Division, Athens, Georgia. February 1, 1991.
3. Tri-State Testing and Drilling. Report of an Environmental Assessment, Landes Company Facilities 314 Hooker Road, Chattanooga, Tennessee. December 19, 1990.

Table 2: SAMPLE CODING AND LOCATIONS

<u>Sample Code</u>	<u>Sample Type/Source</u>	<u>Location</u>
LC-SD-01	background sediment	in wetland at southern end
LC-SD-02	sediment	in wetland adjacent to illegal dump
LC-SD-03	sediment	in wetland at northern end
LC-SD-04	background sediment	in railroad ditch west of site boundary
LC-SD-05	sediment	in blueline stream down gradient of Landes Co. stormdrains
LC-SS-01	background surface soil	east central portion of site
LC-SS-02	surface soil	area next to main building
LC-SS-03	surface soil	area east of paint shed
LC-SS-04	surface soil	area east of paint shed
LC-SS-05	surface soil	illegal dump area
LC-SS-06	duplicate	same as LC-SS-05
LC-WS-01	waste	waste piles in illegal dump
LC-WS-02	waste	waste piles in illegal dump
LC-WS-03	waste	waste piles in illegal dump

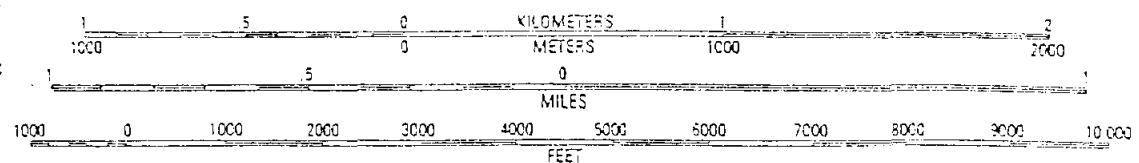
LC-WS-04

waste

waste piles in  
illegal dump

Base Map is a Portion of the Following 7.5' U.S.G.S.  
Quadrangles: Chattanooga, Tennessee, 1976; Fort Oglethorpe  
Georgia-Tennessee, 1982.

SCALE 1:24 000



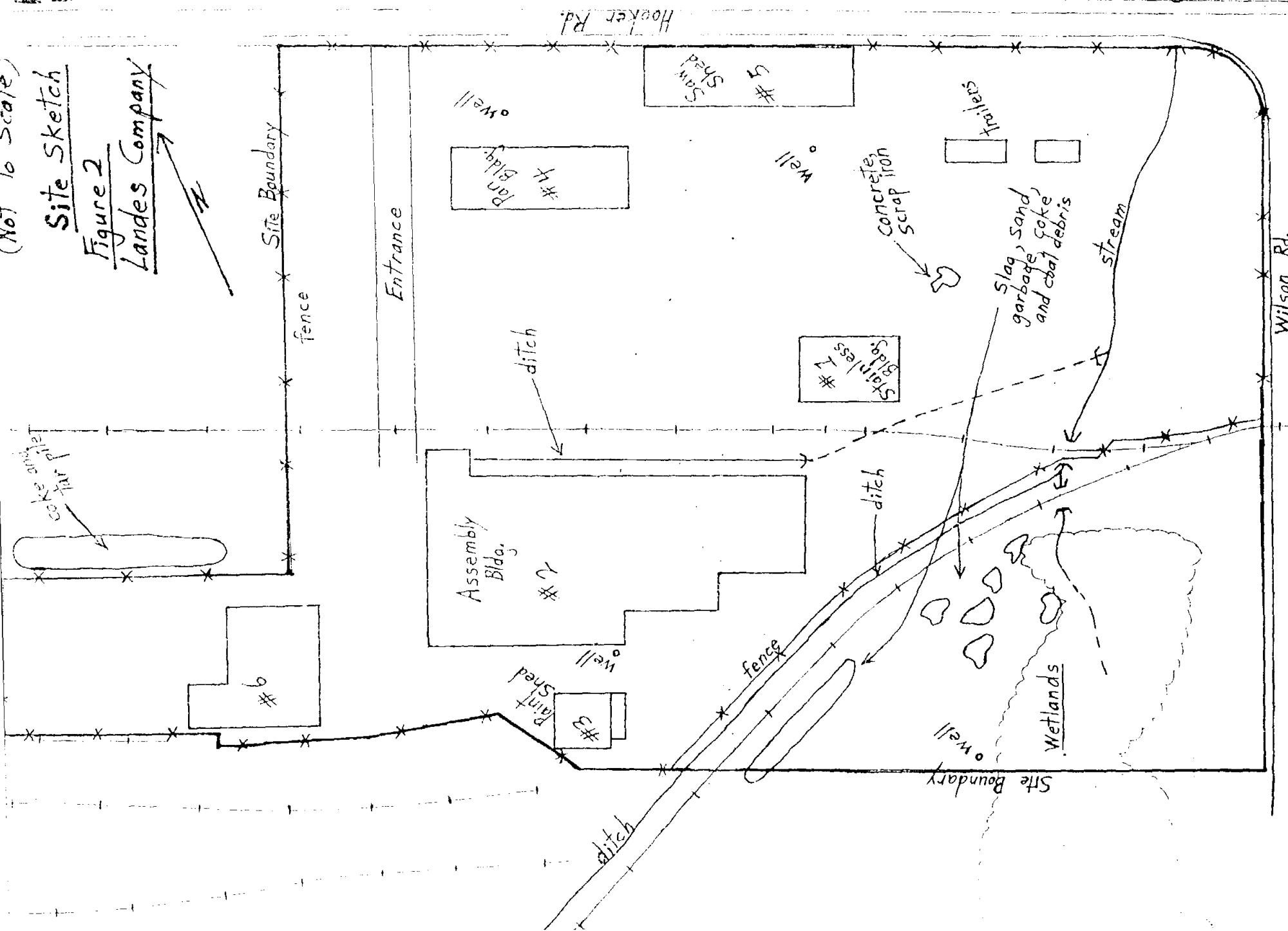
CONTOUR INTERVAL 5 METERS

Figure 1. Site Location Map, Landes Company



(Not to Scale)

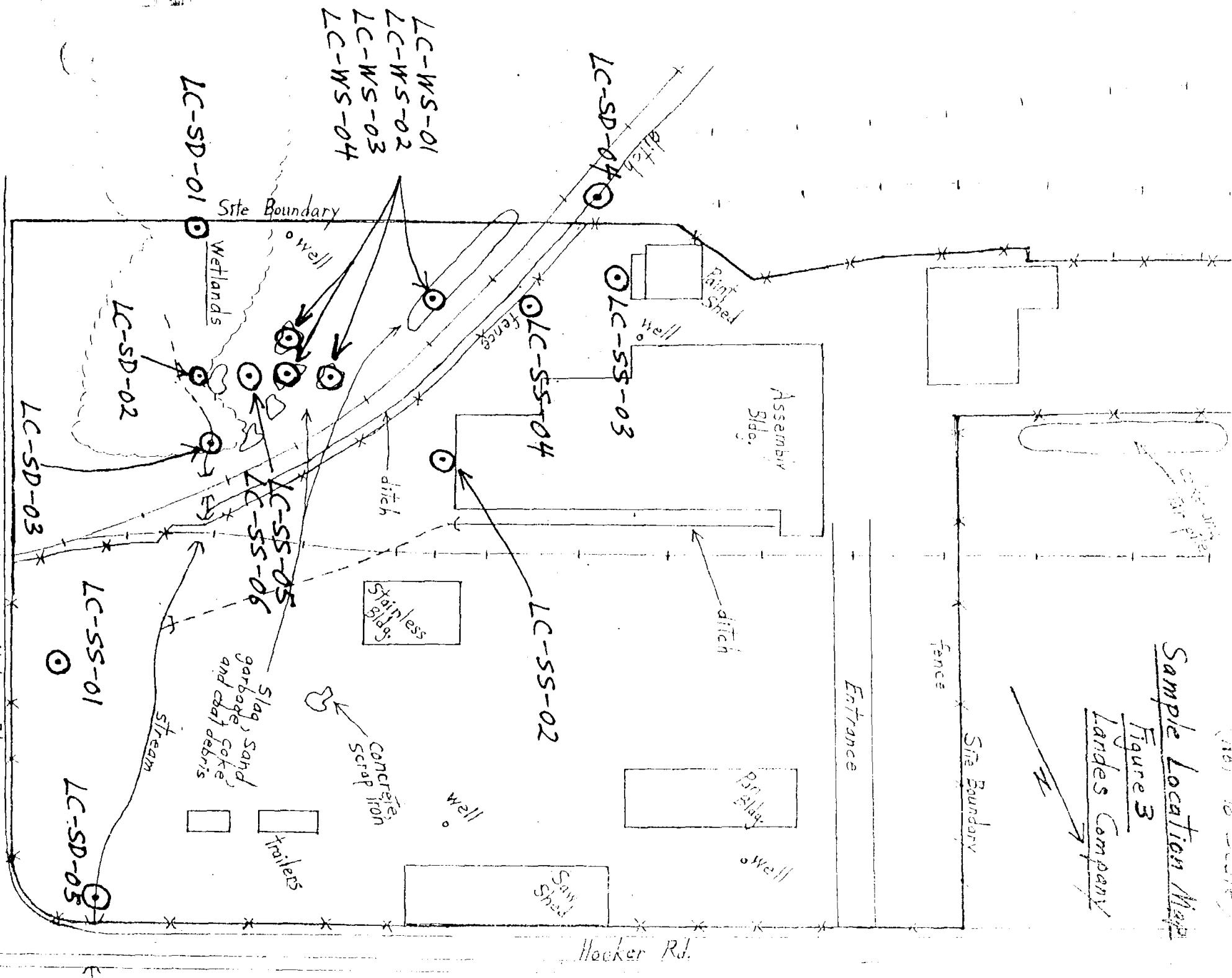
Site Sketch  
Figure 2  
Landes Company



Sample Location Map

Figure 3

Landes Company



**Site No. TND 003328960**

**Ref. No. 57**

# **HANDBOOK OF TOXIC AND HAZARDOUS CHEMICALS AND CARCINOGENS**

**Second Edition**

by

**Marshall Sittig**

Princeton University

## **ABOUT THE AUTHOR**

Marshall Sittig, a chemical engineer, is President and Managing Director of Sittig & Noyes, International Chemical and Process Industries Consultants, and was formerly with E.I. Du Pont de Nemours & Co., Inc. in chemicals manufacturing, Ethyl Corporation in liaison between research and sales, and Princeton University as Director of Governmental Relations.

MAR 20 1985

STATE OF NEW JERSEY  
DEPT. OF PUBLIC HEALTH  
DIVISION OF  
SOLID WASTE MANAGEMENT



**NOYES PUBLICATIONS**  
Park Ridge, New Jersey, U.S.A.

**DOT Designation:** Nonflammable gas.

**Potential Exposures:** Argon is used as an inert gas shield in arc welding; it is used to fill electric lamps. It is used as a blanketing agent in metals refining (especially titanium and zirconium).

**Permissible Exposure Limits in Air:** There is no Federal standard. ACGIH lists argon as a simple asphyxiant with no specified TLV.

**Permissible Concentration in Water:** No criteria set.

**Routes of Entry:** Inhalation and possibly skin contact with liquid argon.

**Harmful Effects and Symptoms:** The gas is a simple asphyxiant as noted above. The liquid can cause frostbite.

**Disposal Method Suggested:** Vent to atmosphere.

#### References

- (1) Sax, N.I., Ed., *Dangerous Properties of Industrial Materials Report*, 1, No. 5, 36-37, New York, Van Nostrand Reinhold Co. (1981).

## ARSENIC AND ARSENIC COMPOUNDS

- Carcinogen (IARC) (11)
  - Hazardous substances (Some compounds, EPA)
- Arsenic compounds classified by EPA as hazardous substances are: arsenic disulfide, arsenic pentoxyde, arsenic trichloride, arsenic trioxide and arsenic trisulfide. Also the EPA has issued rebuttable presumptions against registration (RPAR's) for several arsenic-containing pesticides as follows: arsenic acid, cacodylic acid, calcium arsenate, DSMA, lead arsenate, MSMA and sodium arsenite.
- Hazardous waste constituents (EPA)
  - Priority toxic pollutant (EPA)

**Description:** As, elemental arsenic, occurs to a limited extent in nature as a steel-gray metal that is insoluble in water. Arsenic in this discussion includes the element and any of its inorganic compounds excluding arsine. Arsenic trioxide ( $As_2O_3$ ), the principal form in which the element is used, is frequently designated as arsenic, white arsenic, or arsenous oxide. Arsenic is present as an impurity in many other metal ores and is generally produced as arsenic trioxide as a by-product in the smelting of these ores, particularly copper. Most other arsenic compounds are produced from the trioxide.

**Code Numbers:** (Element) CAS 7440-38-2 RTECS CG0525000 UN 1558

**Type of Compound/Label Designation:** Poison.

**Synonyms:** None.

**Potential Exposure:** Arsenic compounds have a variety of uses. Arsenates and arsenites are used in agriculture as insecticides, herbicides, larvicides, and pesticides. Arsenic trichloride is used primarily in the manufacture of pharmaceuticals. Other arsenic compounds are used in pigment production, the manufacture of glass as a bronzing or decolorizing agent, the manufacture of opal glass and enamels, textile printing, tanning, taxidermy, and antifouling paints. They are also used to control sludge formation in lubricating oils. Metallic

arsenic is used as an alloying agent to harden lead shot and in lead-base bearing materials. It is also alloyed with copper to improve its toughness and corrosion resistance.

EPA estimates that more than 6 million people living within 12 miles of major sources—copper, zinc, and lead smelters—may be exposed to 10 times the average U.S. atmospheric levels of arsenic. The agency says that 40,000 people living near some copper smelters may be exposed to 100 times the national atmospheric average.

**Permissible Exposure Limits in Air:** The Federal standard for arsenic and its compounds was previously 0.5 mg/m<sup>3</sup> of air as As. In 1973, NIOSH proposed (1) the lower recommended standard of 0.05 mg As/m<sup>3</sup> of air determined as a time-weighted average (TWA) exposure for up to a 10-hour workday, 40-hour workweek. Then, in November 1975, OSHA proposed a workplace exposure limit for inorganic arsenic at 4 µg/m<sup>3</sup> (8-hour, TWA). The economic impact of such a standard has been assessed (2). The previous standard of 500 µg/m<sup>3</sup> for all forms of arsenic would remain in effect only for organic forms.

A 1975 NIOSH document (3) proposed that inorganic arsenic be controlled so that no worker is exposed to a concentration of arsenic in excess of 0.002 mg/m<sup>3</sup> (2.0 µg) as determined by a 15-minute sampling period. Finally in 1978 a standard was promulgated (4) which limits occupational exposure to inorganic arsenic to 10 µg/m<sup>3</sup> (µg/m<sup>3</sup> of air) based on an 8-hour time-weighted average.

The ACGIH (1983/84) TWA value for arsenic and soluble compounds (as As) is 0.2 mg/m<sup>3</sup>. Arsenic trioxide production is categorized as "suspect of carcinogenic potential for man." As a first step toward regulating industrial emissions of inorganic arsenic, EPA has listed the substance as a hazardous air pollutant, as defined under the Clean Air Act and the agency's proposed airborne carcinogen policy.

**Determination in Air:** Collection on a filter and analysis by atomic absorption spectrometry (A-1). See also (A-10).

**Permissible Concentration in Water:** To protect freshwater aquatic life—total recoverable trivalent inorganic arsenic never to exceed 440 µg/l. To protect saltwater aquatic life—508 µg/l on an acute basis. To protect human health—preferably zero. A value of 0.02 µg/l corresponds to a human health risk of 1 in 100,000. EPA has established a maximum arsenic level of 0.05 mg/l. This does not address carcinogenicity and is under review.

Allowable arsenic levels in drinking water have also been set as follows (A-65):

South African Bureau of Standards	0.05 mg/l
World Health Organization	0.05 mg/l
Federal Republic of Germany (1975)	0.04 mg/l

**Determination in Water:** Total arsenic may be determined by digestion followed by silver diethyldithiocarbamate; an alternative is atomic absorption; another is inductively coupled plasma (ICP) optical emission spectrometry.

**Routes of Entry:** Inhalation and ingestion of dust and fumes.

**Harmful Effects and Symptoms:** *Local* — Trivalent arsenic compounds are corrosive to the skin. Brief contact has no effect, but prolonged contact results in a local hyperemia and later vesicular or pustular eruption. The moist mucous membranes are most sensitive to the irritant action. Conjunctiva, moist and macerated areas of the skin, eyelids, the angles of the ears, nose, mouth, and respiratory mucosa are also vulnerable to the irritant effects. The wrists

are common sites of dermatitis, as are the genitalia if personal hygiene is poor. Perforations of the nasal septum may occur. Arsenic trioxide and pentoxide are capable of producing skin sensitization and contact dermatitis. Arsenic is also capable of producing keratoses, especially of the palms and soles. Arsenic has been cited as a cause of skin cancer, but the incidence is low.

**Systemic** — The acute toxic effects of arsenic are generally seen following ingestion of inorganic arsenical compounds. This rarely occurs in an industrial setting. Symptoms develop within  $\frac{1}{2}$  to 4 hours following ingestion and are usually characterized by constriction of the throat followed by dysphagia, epigastric pain, vomiting, and watery diarrhea. Blood may appear in vomitus and stools. If the amount ingested is sufficiently high, shock may develop due to severe fluid loss, and death may ensue in 24 hours. If the acute effects are survived, exfoliative dermatitis and peripheral neuritis may develop.

Cases of acute arsenical poisoning due to inhalation are exceedingly rare in industry. When it does occur, respiratory tract symptoms—cough, chest pain, dyspnea—giddiness, headache, and extreme general weakness precede gastrointestinal symptoms. The acute toxic symptoms of trivalent arsenical poisoning are due to severe inflammation of the mucous membranes and greatly increased permeability of the blood capillaries.

Chronic arsenical poisoning due to ingestion is rare and generally confined to patients taking prescribed medications. However, it can be a concomitant of inhaled inorganic arsenic from swallowed sputum and improper eating habits. Symptoms are weight loss, nausea and diarrhea alternating with constipation, pigmentation and eruption of the skin, loss of hair, and peripheral neuritis. Chronic hepatitis and cirrhosis have been described. Polyneuritis may be the salient feature, but more frequently there are numbness and paresthesias of "glove and stocking" distribution. The skin lesions are usually melanotic and keratotic and may occasionally take the form of an intradermal cancer of the squamous cell type, but without infiltrative properties. Horizontal white lines (striations) on the fingernails and toenails are commonly seen in chronic arsenical poisoning and are considered to be a diagnostic accompaniment of arsenical polyneuritis.

Inhalation of inorganic arsenic compounds is the most common cause of chronic poisoning in the industrial situation. This condition is divided into three phases based on signs and symptoms.

**First Phase:** The worker complains of weakness, loss of appetite, some nausea, occasional vomiting, a sense of heaviness in the stomach, and some diarrhea.

**Second Phase:** The worker complains of conjunctivitis, and a catarrhal state of the mucous membranes of the nose, larynx, and respiratory passages. Coryza, hoarseness, and mild tracheobronchitis may occur. Perforation of the nasal septum is common, and is probably the most typical lesion of the upper respiratory tract in occupational exposure to arsenical dust. Skin lesions, eczematoid and allergic in type, are common.

**Third Phase:** The worker complains of symptoms of peripheral neuritis, initially of hands and feet, which is essentially sensory. In more severe cases, motor paralyses occur; the first muscles affected are usually the toe extensors and the peronei. In only the most severe cases will paralysis of flexor muscles of the feet or of the extensor muscles of hands occur.

Liver damage from chronic arsenical poisoning is still debated, and as yet the question is unanswered. In cases of chronic and acute arsenical poisoning, toxic effects to the myocardium have been reported based on EKG changes. These

findings, however, are now largely discounted and the EKG changes are ascribed to electrolyte disturbances concomitant with arsenicalism. Inhalation of arsenic trioxide and other inorganic arsenical dusts does not give rise to radiological evidence of pneumoconiosis. Arsenic does have a depressant effect upon the bone marrow, with disturbances of both erythropoiesis and myelopoiesis. Evidence is now available incriminating arsenic compounds as a cause of lung cancer as well as skin cancer.

Skin cancer in humans is causally associated with exposure to inorganic arsenic compounds in drugs, drinking water and the occupational environment. The risk of lung cancer was increased 4 to 12 times in certain smelter workers who inhaled high levels of arsenic trioxide. However, the influence of other constituents of the working environment cannot be excluded in these studies. Case reports have suggested an association between exposure to arsenic compounds and blood dyscrasias and liver tumours (14).

#### Points of Attack: Skin, eyes, respiratory system.

**Medical Surveillance:** In preemployment physical examinations, particular attention should be given to allergic and chronic skin lesions, eye disease, psoriasis, chronic eczematous dermatitis, hyperpigmentation of skin, keratosis and warts, baseline weight, baseline blood and hemoglobin count, and baseline urinary arsenic determinations. In annual examinations, the worker's general health, weight, and skin condition should be checked, and the worker observed for any evidence of excessive exposure or absorption of arsenic. Chest x-rays and lung function should be evaluated; analysis of urine, hair, or nails for arsenic should be made every 60 days as long as exposure continues. See also reference (10).

**First Aid:** Irrigate eyes with water. Wash contaminated areas of body with soap and water.

**Personal Protective Methods:** Workers should be trained in personal hygiene and sanitation, the use of personal protective equipment, and early recognition of symptoms of absorption, skin contact irritation, and sensitivity. With the exception of arsine and arsenic trichloride, the compounds of arsenic do not have odor or warning qualities. In case of emergency or areas of high dust or spray mist, workers should wear respirators that are supplied-air or self-contained positive-pressure type with fullface mask. Where concentrations are less than 100 x standard, workers may be able to use halfmask respirators with replaceable dust or fume filters. Protective clothing, gloves, goggles and a hood for head and neck should be provided. When liquids are processed, impervious clothing should be supplied. Clean work clothes should be supplied daily and the workers should shower prior to changing to street clothes.

#### Respirator Selection: See reference (1).

**Disposal Method Suggested (A-31):** Arsenic—elemental arsenic wastes should be placed in long-term storage or returned to suppliers or manufacturers for reprocessing. Arsenic pentaselenide—wastes should be placed in long-term storage or returned to suppliers or manufacturers for reprocessing. Arsenic trichloride—hydrolyze to arsenic trioxide utilizing scrubbers for hydrogen chloride abatement. The trioxide may then be placed in long-term storage. Arsenic trioxide—long-term storage in large siftproof and weatherproof silos. This compound may also be dissolved, precipitated as the sulfide and returned to the suppliers (A-38).

controls and to prevent all skin or respiratory contact. Full body protective clothing and gloves should be used by those employed in handling operations. On exit from a regulated area, employees should shower and change into street clothes, leaving their clothing and equipment at the point of exit to be placed in impervious containers at the end of the work shift for decontamination or disposal. Effective methods should be used to clean and decontaminate gloves and clothing. Showers should be taken prior to dressing in street clothes.

**Respirator Selection:** Fullface, supplied air respirators of continuous flow or pressure demand type should be used.

**Disposal Method Suggested:** Controlled incineration whereby oxides of nitrogen are removed from the effluent gas by scrubber, catalyst or thermal device.

#### References

- (1) IARC Monographs 4:97-111 (1974).
- (2) *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans*, Supplement 1, IARC, Lyon, France, p 38 (1979).
- (3) Sax, N.I., Ed., *Dangerous Properties of Industrial Materials Report*, 2, No. 2, 56-58, New York, Van Nostrand Reinhold Co. (1982).
- (4) See Reference (A-62). Also see Reference (A-64).
- (5) Sax, N.I., Ed., *Dangerous Properties of Industrial Materials Report*, 3, No. 6, 52-55, New York, Van Nostrand Reinhold Co. (Nov./Dec. 1983).

## NATURAL GAS

**Description:** Natural gas consists primarily of methane (85%) with lesser amounts of ethane (9%), propane (3%), nitrogen (2%), and butane (1%). Methane is a colorless, odorless, flammable gas.

**Code Numbers:** UN 1971/1972

**DOT Designation:** —

**Synonyms:** Marsh gas.

**Potential Exposures:** Natural gas is used principally as a heating fuel. It is transported as a liquid under pressure. It is also used in the manufacture of various chemicals including acetaldehyde, acetylene, ammonia, carbon black, ethyl alcohol, formaldehyde, hydrocarbon fuels, hydrogenated oils, methyl alcohol, nitric acids, synthesis gas, and vinyl chloride. Helium can be extracted from certain types of natural gas.

**Permissible Exposure Limits in Air:** There is no Federal standard for natural gas, methane, nitrogen, or butane. The Federal standard for propane is 1,000 ppm (1,800 mg/m<sup>3</sup>). The ACGIH lists 800 ppm (1,900 mg/m<sup>3</sup>) as a TWA for butane.

**Permissible Concentration in Water:** No criteria set.

**Route of Entry:** Inhalation of gas.

**Harmful Effects and Symptoms:** *Local* — Upon escape from pressurized tanks, natural gas may cause frostbite.

*Systemic* — Natural gas is a simple asphyxiant. Displacement of air by the gas may lead to shortness of breath, unconsciousness, and death from hypoxemia. Incomplete combustion may produce carbon monoxide.

**Medical Surveillance:** No specific considerations are needed.

**Personal Protective Methods:** Adequate ventilation should quite easily prevent any potential hazard.

**Disposal Method Suggested:** Flaring.

## NICKEL AND SOLUBLE COMPOUNDS

- Carcinogen (Animal positive, IARC) (5)
- Hazardous substances (Several salts, EPA)
  - Nickel compounds which are classified by EPA as hazardous substances include: nickel ammonium sulfate, nickel chloride, nickel hydroxide, nickel nitrate, and nickel sulfate.
- Hazardous waste constituents (EPA)
- Priority toxic pollutant (EPA)

**Description:** Ni, nickel, is a hard, ductile, magnetic metal with a silver-white color. It is insoluble in water and soluble in acids. It occurs free in meteorites and in ores combined with sulfur, antimony, or arsenic. Processing and refining of nickel is accomplished by either the Oxford (sodium sulfide and electrolysis) or the Mond (nickel carbonyl) processes. In the latter, impure nickel powder is reacted with carbon monoxide to form gaseous nickel carbonyl which is then treated to deposit high purity metallic nickel.

**Code Numbers:** Nickel metal—CAS 7440-02-0 RTECS QR5950000 UN 1378.

**DOT Designation:** Nickel powder—flammable solid.

**Synonyms:** For nickel metal—carbonyl nickel powder, nickel sponge, pulverized nickel, Raney nickel.

**Potential Exposures:** Nickel forms alloys with copper, manganese, zinc, chromium, iron, molybdenum, etc. Stainless steel is the most widely used nickel alloy. An important nickel-copper alloy is Monel metal, which contains 66% nickel and 32% copper and has excellent corrosion resistance properties. Permanent magnets are alloys chiefly of nickel, cobalt, aluminum, and iron.

Elemental nickel is used in electroplating, anodizing aluminum, casting operations for machine parts, and in coinage; in the manufacture of acid-resisting and magnetic alloys, magnetic tapes, surgical and dental instruments, nickel-cadmium batteries, nickel soaps in crankcase oils, and ground-coat enamels, colored ceramics, and glass. It is used as a catalyst in the hydrogenation of fats, oils, and other chemicals, in synthetic coal oil production, and as an intermediate in the synthesis of acrylic esters for plastics.

Exposure to nickel may also occur during mining, smelting, and refining operations.

NIOSH estimates that 250,000 U.S. workers are potentially exposed to nickel.

The route by which most people in the general population receive the largest portion of daily nickel intake is through food. Based on the available data from composite diet analysis, between 300 and 600 µg nickel per day are ingested. Fecal nickel analysis, a more accurate measure of dietary nickel intake, suggests about 300 µg per day. The highest level of nickel observed in water was 75 µg/l. Average drinking water levels are about 5 µg/l. A typical consumption of 2 liters daily would yield an additional 10 µg of nickel, of which up to 1 µg would be absorbed.

Site No. TND 003328960  
Appendix B

Analytical Data Sheets

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source	<u>Lander Co.</u>	Sampling Agency		Sample Type		Sample Priority	
I.D./Site No.	<u>33-633</u>	APC	<input type="checkbox"/> DOT	Sediment	<input checked="" type="checkbox"/> Soil	Emergency	<input type="checkbox"/>
County	<u>33</u>	DWS	<input type="checkbox"/> GW	sludge	<input checked="" type="checkbox"/> sludge	Legal	<input checked="" type="checkbox"/>
Stream Mile	<u>Field No.</u>	SWM	<input type="checkbox"/> UST	Tissue	<input type="checkbox"/> Tissue	Routine	<input checked="" type="checkbox"/>
Collected: Date	<u>2-7-94</u>	EEP	<input checked="" type="checkbox"/> PASI	Other	<input type="checkbox"/>	Ambient	<input type="checkbox"/>
Stream Mile	<u>Depth</u>	SF	<input type="checkbox"/> WPC	Date Priority needed:	<u>3/14/94</u>		
Collected: Date	<u>Time</u>	other (specify):					
Contact Hazard	<u>Unknown</u>			Billing Code (required)	Field Comments:		
Signature of sampler	<u>Craig Starnes</u>			<u>327.38-11</u>			
Send Report to	<u>Wayne Everett</u>						
CFO							

For lab use only K402027  
 Laboratory Number K402027  
 Date received 2-8-94  
 Time received 11:30 by CAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward M. Gray  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	25400	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	4.4	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	72	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01023	V	cadmium, Cd	mg/kg	1.7	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	120	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	10	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	15	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	14.7	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	28200	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	14	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	449843	71930		mercury, Hg	mg/kg				Other		
01053	V	manganese, Mn	mg/kg	1480	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	14.21*	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	11	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	1050	01073		tellurium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	<0.2	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	<10										
01093		zinc, Zn	mg/kg	50.6										
00721	V	cyanide, CN	mg/kg	<										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	79.3										
32731		phenols	mg/kg											

\* please check tests desired

Lab Comments \* Hg = 0.11

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source <u>Lander Co.</u>	Sampling Agency <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input checked="" type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____	Sample Type <input checked="" type="checkbox"/> Sediment <input checked="" type="checkbox"/> Soil <input type="checkbox"/> sludge <input type="checkbox"/> Tissue <input type="checkbox"/> Other _____	Sample Priority <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient  Date Priority needed: <u>3/14/94</u>
I.D./Site No. <u>33-633</u>	Field No. <u>LC-55-02</u>	Depth <u>2"</u>	
County <u>33</u>	Collected Date <u>2-8-94</u>	Time <u>9:00</u>	By <u>DV</u>
Contact Hazard <u>Unknown</u>			
Signature of sampler <u>Don Van Hook</u>			
Send Report to <u>Wayne Everett</u> <u>CFO</u>	Billing Code (required) <u>327.38-11</u>		
Field Comments: _____			

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01103		aluminum, Al	mg/kg	13200	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	9.4	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	111	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	3.8	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	14100	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	29	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	19	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	289	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	14700	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	176	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	141802060	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	1000	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<0.1	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	18	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	1160	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0.4	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	104										
01093		zinc, Zn	mg/kg	355										
00721	Y	cyanide, CN	mg/kg	1.1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	78.3										
		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source	<i>Landes Co.</i>
I.D./Site No.	<i>33-633</i>
County	<i>33</i>
Field No.	<i>LC-SS-03</i>
Stream Mile	<i>Depth 2"</i>
Collected: Date	<i>2/8/94</i>
Time	<i>9:10 AM</i>
By	<i>CJS</i>
Contact Hazard	<i>Unknown</i>
Signature of sampler	<i>Ray Barnard</i>
Send Report to	<i>Wayne Everett</i>
CFO	

Sampling Agency	
— APC	DOT
— DWS	GW
— SWM	UST
— EEP	<input checked="" type="checkbox"/> PASI
<input checked="" type="checkbox"/> SF	WPC
— other (specify):	
Billing Code (required)	<i>327.38-11</i>
Sample Type	
<input checked="" type="checkbox"/> Sediment	
<input checked="" type="checkbox"/> Soil	
<input type="checkbox"/> sludge	
<input type="checkbox"/> Tissue	
Other	
Sample Priority	
Emergency	
<input checked="" type="checkbox"/> Legal	
<input checked="" type="checkbox"/> Routine	
<input type="checkbox"/> Ambient	
Date Priority needed:	<i>3/14/94</i>
Field Comments:	

For lab use only *K402087*  
 Laboratory Number *2894*  
 Date received *2-8-94*  
 Time received *1345* by *LAB*  
 Date reported *MAR 3 1 1994* by *EAM*  
 Reviewed by *Edward M. Gray*  
 Reviewed by *J*

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	<i>334</i>	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	<i>63.1</i>	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	<i>17</i>	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		<input checked="" type="checkbox"/> cadmium, Cd	mg/kg	<i>12.4</i>	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	<i>772</i>	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	<i>165</i>	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	<i>31</i>	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	<i>106</i>	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	<i>395000</i>	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	<i>69</i>	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		<input checked="" type="checkbox"/> magnesium, Mg	mg/kg	<i>180</i>	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	<i>4930</i>	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<i>40.1</i>	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	<i>176</i>	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	<i>159</i>	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	<i>&lt;0.2</i>	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<i>&lt;1</i>										
00934		sodium, Na	mg/kg	<i>394</i>										
01093		zinc, Zn	mg/kg	<i>558</i>										
00721		<input checked="" type="checkbox"/> cyanide, CN	mg/kg	<i>&lt;1</i>										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	<i>98.2</i>										
32731		phenols	mg/kg											

\* please check tests desired

Lab Comments *Trace of CN reaction but interference due to milky precipitate*

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample source Landes Co.  
 I.D./Site No. 33-633  
 County 33 Field No. LC-55-04  
 Stream/Mile \_\_\_\_\_ Depth 2"  
 Collected: Date 7/14/94 Time 9:20 AM By SF  
 Contact Person Unknown  
 Signature of sampler See A75 page 2  
 Send Report to Wayne Everett  
CFO

Sampling Agency	Sample Type	Sample Priority
— APC    — DOT	Sediment	Emergency
— DWS    — GW	Soil	Legal
— SWM    — UST	sludge	Routine
— EEP <input checked="" type="checkbox"/> PASI	Tissue	Ambient
<input checked="" type="checkbox"/> SF    — WPC	Other _____	Date Priority needed: <u>3/14/94</u>
Billing Code (required)		Field Comments: <u>327.38-11</u>

For lab use only  
 Laboratory Number K402088  
 Date received 2-8-94  
 Time received 1345 by LAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward M. Gray  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01103		aluminum, Al	mg/kg	2200	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	25.1	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	115	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	7.1	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	218	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	57	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	13	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	201	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	58000	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	404	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	192	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	599	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	0.93	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	36	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	988	01073		thallium, Tl	mg/Kg						
01148		selenium, Sc	mg/kg	0.4	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	2770										
01093		zinc, Zn	mg/kg	68.4										
00721		cyanide, CN	mg/kg	461.9										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00663		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	71.8										
32731		phenols	mg/kg											

\* please check tests desired

Lab Comments

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source Lander Co.  
 I.D./Site No. 33-633  
 County 33 Field No. LC-SS-05  
 Stream Mile \_\_\_\_\_ Depth 1" p.m.  
 Collected: Date 2/7/94 Time 1:10 By CJS  
 Contact Hazard Hazardous  
 Signature of sampler Ray Lamm  
 Send Report to Wayne Everett  
CFO

Sampling Agency		Sample Type		Sample Priority	
<input type="checkbox"/> APC	<input type="checkbox"/> DOT	<input checked="" type="checkbox"/> Sediment	<input type="checkbox"/> Emergency		
<input type="checkbox"/> DWS	<input type="checkbox"/> GW	<input checked="" type="checkbox"/> Soil	<input checked="" type="checkbox"/> Legal		
<input type="checkbox"/> SWM	<input type="checkbox"/> UST	<input type="checkbox"/> sludge	<input checked="" type="checkbox"/> Routine		
<input type="checkbox"/> EEP	<input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Tissue	<input type="checkbox"/> Ambient		
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> WPC	Other _____			
<u>other (specify):</u> _____		Date Priority needed:		<u>3/14/94</u>	
Billing Code (required)		Field Comments:		<u>327.38-11</u>	

For lab use only  
 Laboratory Number X 402083  
 Date received 2-8-94  
 Time received 1130 by LAB  
 Date reported MAR 31 1994 by EAM  
 Reviewed by Edward M. Clegg  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	8300	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/l.	
01003		arsenic, As	mg/kg	2.4	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	43	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	1.4	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	4400	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	24	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	11	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	31.6	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	10600	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	82	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	850	71930		mercury, Hg	mg/kg						
01053		manganese, Mn	mg/kg	695	01069		nickel, Ni	mg/kg				Other		
71921		mercury, Hg	mg/kg	20.1	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	8	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	806	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0.3	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	94										
01093		zinc, Zn	mg/kg	75.2										
00721		cyanide, CN	mg/kg	5.1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
00638		nitrogen, total kjeldahl	mg/kg											
		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	74.8										
		minerals	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source	<u>Lander Co.</u>				
I.D./Site No.	<u>33-633</u>				
County	<u>33</u>				
Stream Mile	Depth	<u>1"</u>			
Collected: Date	<u>2-7-94</u>	Time	<u>1:20 pm</u>	By	<u>CJS</u>
Contact Hazard	<u>Unknown</u>				
Signature of sampler	<u>Ray Shannahan</u>				
Send Report to	<u>Wayne Everett</u>				

Sampling Agency	
— APC	DOT
— DWS	GW
— SWM	UST
— EEP	<input checked="" type="checkbox"/> PASI
<input checked="" type="checkbox"/> SF	WPC
— other (specify): _____	
Billing Code (required)	
<u>327.38-11</u>	
Sample Type	
<input checked="" type="checkbox"/> Sediment	
<input checked="" type="checkbox"/> Soil	
<input checked="" type="checkbox"/> Sludge	
<input checked="" type="checkbox"/> Tissue	
Other	
Sample Priority	
<input checked="" type="checkbox"/> Emergency	
<input checked="" type="checkbox"/> Legal	
<input checked="" type="checkbox"/> Routine	
<input checked="" type="checkbox"/> Ambient	
Date Priority needed:	<u>3/14/94</u>
Field Comments:	.

For lab use only K402084  
 Laboratory Number K402084  
 Date received 2-8-94  
 Time received 1130 by LAB  
 Date reported MAR 31 1994 by EAM  
 Reviewed by Edward M. Cray  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	6420	01099		antimony, Sb	mg/Kg		01000		arsenic, As	ug/L	
01003		arsenic, As	mg/kg	3.9	01004		arsenic, As	mg/Kg		01005		barium, Ba	ug/L	
01008		barium, Ba	mg/kg	44	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	ug/L	
01028		cadmium, Cd	mg/kg	2.2	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	ug/L	
03917	<input checked="" type="checkbox"/>	calcium, Ca	mg/kg	6380	71939		chromium, Cr	mg/Kg		01049		lead, Pb	ug/L	
01029		chromium, Cr	mg/kg	23	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	ug/L	
01038		cobalt, Co	mg/kg	11	71937		copper, Cu	mg/kg		01065		nickel, Ni	ug/L	
01043		copper, Cu	mg/kg	96.4	81660		iron, Fe	mg/kg		01145		selenium, Se	ug/L	
01170		iron, Fe	mg/kg	8910	71936		lead, Pb	mg/kg		01075		silver, Ag	ug/L	
01052		lead, Pb	mg/kg	83	81741		manganese, Mn	mg/kg		00723		cyanide, CN	ug/L	
00924		magnesium, Mg	mg/kg	771	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	770	01069		nickel, Ni	mg/kg						
71921	<input checked="" type="checkbox"/>	mercury, Hg	mg/kg	40.1	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	9	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	624	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0.3	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	59										
01093		zinc, Zn	mg/kg	70.8										
00721	<input checked="" type="checkbox"/>	cyanide, CN	mg/kg	4.5										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	79.2										
32731		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

rec'd 4/4 - FDN

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES.

Sample source <u>Landes Co.</u>	Sampling Agency <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input checked="" type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____	Sample Type <input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Soil <input type="checkbox"/> Sludge <input type="checkbox"/> Tissue <input type="checkbox"/> Other _____	Sample Priority <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient
I.D./Site No. <u>33-633</u>	Field No. <u>LC-SD-01</u>		Date Priority needed: <u>3/14/94</u>
County <u>33</u>	Stream Mile _____	Depth <u>2"</u>	
Collected Date <u>2-7-94</u>	Time <u>8:30</u>	By <u>CSS</u>	
Contact Hazard <u>Unknown</u>			
Signature of sampler <u>Ron L. Leonard</u>			
Send Report to <u>Wayne (Everett) CFO</u>			
	Billing Code (required)	Field Comments:	
	<u>327.38-11</u>		

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	15300	01099		antimony, Sb	mg/Kg		01000		arsenic, As	ug/L	
01001		arsenic, As	mg/kg	2.8	01004		arsenic, As	mg/Kg		01005		barium, Ba	ug/L	
01003		barium, Ba	mg/kg	62	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	ug/L	
01028		cadmium, Cd	mg/kg	1.1	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	ug/L	
00917		calcium, Ca	mg/kg	614	71939		chromium, Cr	mg/Kg		01049		lead, Pb	ug/L	
01029		chromium, Cr	mg/kg	11	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	ug/L	
01038		cobalt, Co	mg/kg	7	71937		copper, Cu	mg/kg		01065		nickel, Ni	ug/L	
01043	X	copper, Cu	mg/kg	11.5	81660		iron, Fe	mg/kg		01145		selenium, Se	ug/L	
01170		iron, Fe	mg/kg	1700	71936		lead, Pb	mg/kg		01075		silver, Ag	ug/L	
01052		lead, Pb	mg/kg	35	81741		manganese, Mn	mg/kg		00723		cyanide, CN	ug/L	
00924		magnesium, Mg	mg/kg	1040	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	236	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<0.1	01149		selenium, Se	mg/kg						
01068	Y	nickel, Ni	mg/kg	8	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	890	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0.4	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	62										
01093		zinc, Zn	mg/kg	93.6										
00721	Y	cyanide, CN	mg/kg	<1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
00668		nitrogen, total kjeldahl	mg/kg											
		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	71.0										
32731		phenols	mg/kg											

\* please check tests desired

Lab Comments

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source <u>Landes Co.</u> I.D./Site No. <u>33-633</u>		Sampling Agency <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____	Sample Type <input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Soil <input type="checkbox"/> sludge <input type="checkbox"/> Tissue <input type="checkbox"/> Other _____	Sample Priority <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient  Date Priority needed: <u>3/14/94</u>
County <u>33</u>	Field No. <u>LC-SD-02</u>	Stream Mile _____	Depth <u>4"</u>	
Collected: Date <u>2-7-94</u>	Time <u>8:55</u>	By <u>CJS</u>		
Contact Hazard <u>Unknown</u>				
Signature of sampler <u>Craig Ellsworth</u>				
Send Report to <u>Wayne Everett</u> <u>CFO</u>				
		Billing Code (required)	<u>327.38-11</u>	
Field Comments: _____				

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	26700	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	8.6	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	86	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	1.5	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	1550	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	14	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	17	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	20.0	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	17300	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	32	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	1280	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	1470	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<0.1	01149		selenium, Sc	mg/kg						
01068		nickel, Ni	mg/kg	15	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	1420	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0.2	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	112										
01093		zinc, Zn	mg/kg	74.0										
00721	<input checked="" type="checkbox"/>	cyanide, CN	mg/kg	<1										
01023		boron, B	mg/kg				Coal							
		nitrogen, ammonia	mg/kg				ash	%						
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg				heat content	BTU						
		nitrogen, total kjeldahl	mg/kg				Moisture	%						
00568		phosphate, total	mg/kg				sulfur	%						
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	72.4										
32731		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source	Landes Co.
I.D./Site No	33-633
County	33
Field No.	LC-SD-03
Stream Mile	Depth 1"
Collected: Date	2-7-94
Time	9:10
By	CSS
Contact Hazard	Unknown
Signature of sampler	Craig Lannark
Send Report to	Wayne Everett
CFO	

Sampling Agency	
APC	DOT
DWS	GW
SWM	UST
EEP	X PASI
X SF	WPC
other (specify):	
Billing Code (required)	327.38-11
Field Comments:	

For lab use only  
 Laboratory Number K402076  
 Date received 2-8-94  
 Time received 11:30 by CAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward M. Brown  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	18800	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003	X	arsenic, As	mg/kg	5.2	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	48	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	1.9	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	1850	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	14	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	20	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	18.9	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	17800	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	38	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924	X	magnesium, Mg	mg/kg	12800	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	1740	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<0.1	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	12	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	1190	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	<0.2	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	1										
00934		sodium, Na	mg/kg	76										
01093		zinc, Zn	mg/kg	75.7										
00721	X	cyanide, CN	mg/kg	<1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
(0)633		nitrogen, NO <sub>2</sub> & NO <sub>3</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00668		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	77.6										
32731		phenols	mg/kg											

\* please check tests desired

Lab Comments

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source Landes Co.  
I.D./Site No. 33-633  
County 33- Field No. LC-SD-04  
Stream Mile \_\_\_\_\_ Depth \_\_\_\_\_  
Collected: Date 2-7-94 Time 10:15 AM By CJS  
Contact Hazard Unknown  
Signature of sampler Tom Kannan  
Send Report to Wayne Everett  
CFO

Sampling Agency	APC	DOT	Sample Type	<input checked="" type="checkbox"/> Sediment	<input type="checkbox"/> Soil	<input type="checkbox"/> sludge	<input type="checkbox"/> Tissue	Sample Priority
	DWS	GW		<input type="checkbox"/> Emergency	<input checked="" type="checkbox"/> Legal	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Ambient	
	SWM	UST						
	EEP	<input checked="" type="checkbox"/> PASI						
	SF	WPC						
	other (specify):							
Billing Code (required)	<u>327.38-11</u>							
Field Comments: <u>.</u>								

For lab use only K402078  
Laboratory Number 2-8-94  
Date received 1130 by CAB  
Time received 1130 by CAB  
Date reported MAR 3 1 1994 by EAM  
Reviewed by Edward M. Gray  
Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	504.0	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	16.2	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	177 <del>2</del> JAH	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	2.0	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	276.0	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	25	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	10	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01143		copper, Cu	mg/kg	159	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	1320.0	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	215	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	5893.861	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	359	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	0.81	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	10	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	790	01073		diallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	2.2	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	21										
00924		sodium, Na	mg/kg	122										
01093		zinc, Zn	mg/kg	243										
(X)721		cyanide, CN	mg/kg	2180										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
(X)633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
00968		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	66.8										
32731		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source	<u>Lander Co.</u>
I.D./Site No.	<u>33-633</u>
County	<u>33</u>
Stream Mile	<u>2"</u>
Collected: Date	<u>12-7-93</u>
Depth	<u>2"</u>
Time	<u>2:00 pm</u>
By	<u>CJS</u>
Contact Hazard	<u>Unknown</u>
Signature of sampler	<u>Craig Hammar</u>
Send Report to	<u>Wayne Everett,</u> <u>CFO</u>

Sampling Agency	
— APC	<input type="checkbox"/> DOT
— DWS	<input type="checkbox"/> GW
— SWM	<input type="checkbox"/> UST
— EEP	<input checked="" type="checkbox"/> PASI
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> WPC
other (specify): _____	
Sample Type	
<input checked="" type="checkbox"/> Sediment	
<input type="checkbox"/> Soil	
<input type="checkbox"/> sludge	
<input type="checkbox"/> Tissue	
Other	
Sample Priority	
<input type="checkbox"/> Emergency	
<input checked="" type="checkbox"/> Legal	
<input checked="" type="checkbox"/> Routine	
<input type="checkbox"/> Ambient	
Date Priority needed:	<u>3/14/94</u>
Billing Code (required)	<u>327.38-11</u>
Field Comments:	

For lab use only K402085  
 Laboratory Number 2-8-94  
 Date received 11/30 by LAB  
 Time received 11:30 by LAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward M. Gray  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	167.0	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	26.4	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	140	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	7.4	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	4530	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029		chromium, Cr	mg/kg	81	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	177	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	262	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	36300	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	317	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	1060	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	4740	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	1.26	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	82	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	1330	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	4.6	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	256										
01093		zinc, Zn	mg/kg	943										
00721		cyanide, CN	mg/kg	207.6										
01023		boron, B	mg/kg				Coal	-						
		nitrogen, ammonia	mg/kg				ash	%						
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg				heat content	BTU						
		nitrogen, total kjeldahl	mg/kg				Moisture	%						
00668		phosphate, total	mg/kg				sulfur	%						
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	44.5										
32731		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source	Landes Co.	Sampling Agency		Sample Type	Sediment	Sample Priority	Emergency	For lab use only
ID/Site No	33-633	APC	DOT	Soil	<input checked="" type="checkbox"/>	Legal	<input checked="" type="checkbox"/>	Laboratory Number
County	33	DWS	GW	sludge	<input checked="" type="checkbox"/>	Routine	<input checked="" type="checkbox"/>	2-8-94
Stream Mile	2"	SWM	UST	Tissue	<input type="checkbox"/>	Ambient	<input type="checkbox"/>	Date received
Collected Date	2/7/94	EEP	PASI	Other	Waste	Date Priority needed	3/14/94	Time received
Contact Hazard	Unknown	SF	WPC					Date reported
Signature of sampler	Wayne Everett	other (specify):						Mar 3 1 1994 by EAM
Send Report to	CFO	Billing Code (required)	327.38-11	Field Comments:				Reviewed by Edward P. S. Gray
								Reviewed by

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	5298	01099		antimony, Sb	mg/Kg		01000		arsenic, As	ug/L	
01003		arsenic, As	mg/kg	18.8	01004		arsenic, As	mg/Kg		01005		barium, Ba	ug/L	
01008		barium, Ba	mg/kg	205	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	ug/L	
01028		cadmium, Cd	mg/kg	2.5	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	ug/L	
00917		calcium, Ca	mg/kg	3090	71939		chromium, Cr	mg/Kg		01049		lead, Pb	ug/L	
01029		chromium, Cr	mg/kg	111	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	ug/L	
01038		cobalt, Co	mg/kg	13	71937		copper, Cu	mg/kg		01065		nickel, Ni	ug/L	
01043		copper, Cu	mg/kg	65.6	81660		iron, Fe	mg/kg		01145		selenium, Se	ug/L	
01170		iron, Fe	mg/kg	14800	71936		lead, Pb	mp/kg		01075		silver, Ag	ug/L	
01052		lead, Pb	mg/kg	187	81741		manganese, Mn	mg/kg		00723		cyanide, CN	ug/L	
00924		magnesium, Mg	mg/kg	607	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	382	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	0.89	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg	10	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	698	01073		tellurium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	3.1	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	<1										
00934		sodium, Na	mg/kg	222										
01093		zinc, Zn	mg/kg	108										
00721		cyanide, CN	mg/kg	2523										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
18568		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	82.0										
77M		phenols	mg/kg											

\* please check tests desired

Lab Comments

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source <u>Lander Co.</u>	Sampling Agency <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input checked="" type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____	Sample Type <input type="checkbox"/> Sediment <input type="checkbox"/> Soil <input type="checkbox"/> sludge <input type="checkbox"/> Tissue <input type="checkbox"/> Other <u>Waste</u>  Date Priority needed: <u>3/14/94</u>	Sample Priority <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient
LO/Site No <u>33-633</u>	Field No <u>LC-WS-02</u>	For lab use only Laboratory Number <u>K402080</u>	
County <u>33</u>	Stream Mile _____ Depth <u>2"</u>	Date received <u>2-8-94</u>	
Collected Date <u>2/7/94</u> , Time <u>10:50 AM</u> by <u>CJS</u>	Contact Hazard <u>Unknown</u>	Time received <u>11:30</u> by <u>LAB</u>	
Signature of sampler <u>Wayne Everell</u>	Send Report to <u>CFD</u>	Date reported <u>MAR 31 1994</u> by <u>EAM</u>	
Billing Code (required) <u>327.38-11</u>		Reviewed by <u>Edward McCurdy</u>	
Field Comments: _____		Reviewed by _____	

code	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108	aluminum, Al	mg/kg	187000	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003	arsenic, As	mg/kg	1.2	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008	barium, Ba	mg/kg	14	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01023	cadmium, Cd	mg/kg	1.3	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917	calcium, Ca	mg/kg	2230	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01029	chromium, Cr	mg/kg	11	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038	cobalt, Co	mg/kg	3	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043	copper, Cu	mg/kg	11.1	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01120	iron, Fe	mg/kg	5630	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052	lead, Pb	mg/kg	28	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924	magnesium, Mg	mg/kg	386	71930		mercury, Hg	mg/kg				Other		
01053	manganese, Mn	mg/kg	147	01069		nickel, Ni	mg/kg						
71921	mercury, Hg	mg/kg	<0.1	01149		selenium, Se	mg/kg						
01068	nickel, Ni	mg/kg	4	81742		silver, Ag	mg/kg						
00938	potassium, K	mg/kg	199	01073		thallium, Tl	mg/Kg						
01148	selenium, Se	mg/kg	0.2	71938		zinc, Zn	mg/kg						
01078	silver, Ag	mg/kg	<1										
08931	sodium, Na	mg/kg	31										
01093	zinc, Zn	mg/kg	20.3										
00721	cyanide, CN	mg/kg	<1										
01023	boron, B	mg/kg				Coal							
	nitrogen, ammonia	mg/kg				ash	%						
00633	nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg				heat content	BTU						
	nitrogen, total kjeldahl	mg/kg				Moisture	%						
08968	phosphate, total	mg/kg				sulfur	%						
	oil and grease	mg/g											
	hydrocarbons, total	mg/g											
	percent solids	%	95.9										
327.4	total oil	mg/kg											

\* please check tests desired

Lab Comments: \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

## INORGANIC ANALYSIS, SOLIDS

Sample Source Lander Co.  
 ID/Site No. 33-633  
 County 33 Field No. LC-VS-03  
 Stream/Mile \_\_\_\_\_ Depth 2"  
 Collected Date 2-7-94 Time 11:05 By CSS  
 Contact Hazard Unknown  
 Signature of sampler Ray Manning  
 Send Report to Wayne Everett,  
CFO

Sampling Agency	APC	DOT	Sample Type	Sediment	Sample Priority
	DWS	GW		Soil	Emergency
	SWM	UST		sludge	<input checked="" type="checkbox"/> Legal
	EEP	<input checked="" type="checkbox"/> PASI		Tissue	<input checked="" type="checkbox"/> Routine
	<input checked="" type="checkbox"/> SF	<input type="checkbox"/> WPC	Other	<u>Waste</u>	<input type="checkbox"/> Ambient
			Date Priority needed: <u>3/14/94</u>		
			Billing Code (required)		
			Field Comments: <u>327.38-11</u>		

For lab use only K402081  
 Laboratory Number K402081  
 Date received 2-8-94  
 Time received 11:30 by CAB  
 Date reported MAR 3 1 1994 by EAM  
 Reviewed by Edward McCrary  
 Reviewed by \_\_\_\_\_

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	3600	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	28.1	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	192	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	41.9	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	1840	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01079		chromium, Cr	mg/kg	186	31659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01078		cobalt, Co	mg/kg	32	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01043		copper, Cu	mg/kg	13300	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	52700	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	4190	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	4150	71930		mercury, Hg	mg/kg				Other		
01053		manganese, Mn	mg/kg	730	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	0.30	01149		selenium, Se	mg/kg						
01063		nickel, Ni	mg/kg	714	81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg	131	01073		thallium, Tl	mg/Kg						
01148		selenium, Se	mg/kg	0A-0.3 1.4	71938		zinc, Zn	mg/kg						
01078		silver, Ag	mg/kg	28										
00934		sodium, Na	mg/kg	62										
01093		zinc, Zn	mg/kg	14300										
00721		cyanide, CN	mg/kg	<1										
01023		boron, B	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
(7) 8.68		phosphate, total	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	83.2										
		phenols	mg/kg											

\* please check tests desired

Lab Comments \_\_\_\_\_

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<i>Lander 6.</i>
ID/Site No.	33-633
County	33
Stream Mile	Field No. LC-WS-04
Collected: Date	Depth
Contact Hazard	Time 11:25 By CJS
Signature of sampler	
Send Report to	Wayne Everett
CFO	

Sampling Agency	
— APC	DOT
— DWS	GW
— SWM	UST
EEP	X PASI
X SF	WPC
other (specify):	
Sample Type	Sediment
	Soil
	sludge
	Tissue
Other	<i>Waste</i>
Sample Priority	Emergency
	X Legal
	X Routine
	Ambient
Date Priority needed:	<i>3/14/94</i>
Billing Code (required)	327.38-11
Field Comments:	

## INORGANIC ANALYSIS, SOLIDS

For lab use only *K402082*  
 Laboratory Number *2-8-94*  
 Date received *1/30* by *LAB*  
 Time received *11:30* by *EAM*  
 Date reported *MAR 31 1994* by *EAM*  
 Reviewed by *Edward McCrary*  
 Reviewed by *J*

code	*	Sediment	Unit	value	code	*	Tissue	Unit	value	code	*	TCLP	Unit	value
01108		aluminum, Al	mg/kg	12.0	01099		antimony, Sb	mg/Kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg	4.0	01004		arsenic, As	mg/Kg		01005		barium, Ba	µg/L	
01008		barium, Ba	mg/kg	50	34252		beryllium, Be	mg/Kg		01025		cadmium, Cd	µg/L	
01028		cadmium, Cd	mg/kg	1.3	71940		cadmium, Cd	mg/Kg		01030		chromium, Cr	µg/L	
00917		calcium, Ca	mg/kg	1470	71939		chromium, Cr	mg/Kg		01049		lead, Pb	µg/L	
01129		chromium, Cr	mg/kg	18	81659		cobalt, Co	mg/Kg		71890		mercury, Hg	µg/L	
01038		cobalt, Co	mg/kg	17	71937		copper, Cu	mg/kg		01065		nickel, Ni	µg/L	
01012		copper, Cu	mg/kg	28.4	81660		iron, Fe	mg/kg		01145		selenium, Se	µg/L	
01170		iron, Fe	mg/kg	26000	71936		lead, Pb	mg/kg		01075		silver, Ag	µg/L	
01052		lead, Pb	mg/kg	43	81741		manganese, Mn	mg/kg		00723		cyanide, CN	µg/L	
00924		magnesium, Mg	mg/kg	1340	71930		mercury, Hg	mg/kg						
01053		manganese, Mn	mg/kg	1380	01069		nickel, Ni	mg/kg						
71921		mercury, Hg	mg/kg	<0.1	01149		selenium, Se	mg/kg				Other		
01068		nickel, Ni	mg/kg	15	81742		silver, Ag	mg/kg						
00978		potassium, K	mg/kg	1840	01073		thallium, Tl	mg/Kg						
01138		selenium, Se	mg/kg	0.3	71938		zinc, Zn	mg/kg						
01072		silver, Ag	mg/kg	<1										
00734		sodium, Na	mg/kg	40										
01093		zinc, Zn	mg/kg	90.7										
01121		cyanide, CN	mg/kg	<1										
01023		boron, B	mg/kg				Coal							
		nitrogen, ammonia	mg/kg				ash	%						
00633		nitrogen, NO <sub>x</sub> & NO <sub>y</sub>	mg/kg				heat content	BTU						
		nitrogen, total kjeldahl	mg/kg				Moisture	%						
00968		phosphate, total	mg/kg				sulfur	%						
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	78.6										
		per cent	%											

\* please check tests desired

Lab Comments

## TENNESSEE DEPARTMENT OF HEALTH

## TE SLIP

FROM RLH	DATE <u>3-11-94</u>
TO GAM	<u>3-11-94</u>
RAW	<u>3-11-94 (all)</u>

Please review and route as indicated:

- NBO (box on 6th)
- SWM, Attn: Greg Luke, L&C Tower, 5th Floor
- DOT Sampling (see attached)
- Division of Superfund, L&C Tower, Attn.:
- Underground Storage Tanks, L&C Tower, Attn.: Chuck Head
- Division of Radiological Health
- Environmental Field Office; Water Pollution, Water Supply, Superfund, Underground Storage Tanks, Attn.: Brick Church Park Drive, Nashville, TN
- Division of Air Pollution Control, Attn.: Robert Brawner, Gary Leggett, Charles Northington
- Division of Water Pollution Control
- Division of Water Supply, Attn: Robert Foster, Tom Moss
- Division of Ground Water Protection
- Chattanooga Field Office; Water Pollution, Water Supply, Superfund, Underground Storage Tanks, Attn: *Wayne Everett*  
540 McCallie, Chattanooga, TN 37402
- Jackson Branch Lab, Attn: RLM
- Knoxville Branch Lab, Attn: EAM
- Aquatic Biology, Basement
- CEM, LQA, 5th floor
- Memphis Basin/Field Office
- Knoxville Basin/Field Office
- Jackson Basin/Field Office
- Johnson City Basin/Field Office
- Other

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Endles Co.  
ID / Site No 33-633  
County 53 Field No LC-55-01  
Stream Mile \_\_\_\_\_ Depth 2'  
Collected Date 2-7-94 Time 10:00 AM By CS  
Contact Hazard Unknown  
Signature of sampler Craig A. Gorman  
Send Report to Wayne Everett, CFO

Sampling Agency

<input type="checkbox"/> APC	<input type="checkbox"/> DOT
<input type="checkbox"/> DWS	<input type="checkbox"/> GW
<input type="checkbox"/> SWM	<input type="checkbox"/> UST
<input type="checkbox"/> EEP	<input checked="" type="checkbox"/> PASI
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> WPC
✓ other (specify):	

Sample  
 Soil  
 Sediment  
 Water  
 Other

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient

Date Priority needed  
3/14/94

Billing Code (required)

#### **Field Comments:**

	Halogenated
32104	bromoform
32101	bromodichloromethane
34113	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

ORGANIC ANALYSIS

## Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 9020146

Date received 2/8/94

Time received 10/10 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

## Petroleum Hydrocarbons

## Gasoline Range Organics

### Diesel Range Organics

**Additives:**

Methyl tert-butyl ether  
diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

### CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

**Note for samplers:** Only one chain of custody form is required per sample set or site (if all collected at the same time).

#### Sample Custody

1. Collected by \_\_\_\_\_  
Delivered to \_\_\_\_\_

*Craig Shanahan*  
*Greyhound*

Date 2-7-94 time 10:00 AM  
Date 2-7-94 time 4:00 PM

2. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

3. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

4. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

5. Received in Lab by \_\_\_\_\_

*Lee Barracare*

Date 2/8/94 time 1010  
Date 2/8/94 time 1010

6. Logged in by \_\_\_\_\_

*Lee Barracare*

#### Additional information

7. Nearest town or city \_\_\_\_\_ *Chattanooga*

8. Names of others present at time sample collected *Don VanHout, Carl Speth*

9. Approximate volume of sample *40 oz.*

10. Number of other samples collected at same time at this point *0*

11. Describe field collection procedure and special handling or preservation of this sample

*As per EPA guidelines and kept on ice at 4°C*

12. Describe how sample transported to laboratory *by bus*

13. Sample sealed by *Craig Shanahan* Date sample sealed *2-7-94*

14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
 ENVIRONMENTAL LABORATORIES  
 ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
 Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
 Sample Site Code: 33-633  
 Sample Type: SOIL  
 County: 33  
 Field No: LC-SS-01  
 Collected-Date 02/07/94 Time 10:00 By CJS  
 Date Priority Needed 03/14/94

Laboratory Number 94-02-0146  
 Branch Lab Number  
 Received-Date 02/08/94 Time 10:10 By LJB  
 Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U <2.5
32101	BROMODICHLOROMETHANE	U <2.5
34413	BROMOMETHANE	U <5.0
32102	CARBON TETRACHLORIDE	U <2.5
34301	CHLOROBENZENE	U <2.5
34311	CHLOROETHANE	U <5.0
34576	2-CHLOROETHYL VINYL ETHER	U <2.5
32106	CHLOROFORM	U <2.5
34418	CHLOROMETHANE	U <5.0
32105	DIBROMOCHLOROMETHANE	U <2.5
34536	1,2-DICHLOROBENZENE	U <2.5
34566	1,3-DICHLOROBENZENE	U <2.5
34571	1,4-DICHLOROBENZENE	U <2.5
34668	DICHLORODIFLUOROMETHANE	U <5.0
34496	1,1-DICHLOROETHANE	U <2.5
34531	1,2-DICHLOROETHANE	U <2.5
34501	1,1-DICHLOROETHENE	U <2.5
	CIS-1,2-DICHLOROETHENE	U <2.5
34546	TRANS-1,2-DICHLOROETHENE	U <2.5
34541	1,2-DICHLOROPROPANE	U <2.5
34045	CIS-1,3-DICHLOROPROPENE	U <2.5
34699	TRANS-1,3-DICHLOROPROPENE	U <2.5
34423	METHYLENE CHLORIDE	U <2.5
34516	1,1,2,2-TETRACHLOROETHANE	U <2.5
34475	TETRACHLOROETHENE	U <2.5
34506	1,1,1-TRICHLOROETHANE	U <2.5
34511	1,1,2-TRICHLOROETHANE	U <2.5
39180	TRICHLOROETHENE	U <2.5
39488	TRICHLOROFUOROMETHANE	J <5.0
39715	VINYL CHLORIDE	U <5.0

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	U <2.5
34301	CHLOROBENZENE	U <2.5
34536	1,2-DICHLOROBENZENE	U <2.5
34566	1,3-DICHLOROBENZENE	U <2.5
34571	1,4-DICHLOROBENZENE	U <2.5
34371	ETHYL BENZENE	U <2.5
34010	TOLUENE	U <2.5
	O-XYLENE	U <2.5
	M-XYLENE & P-XYLENE	U <2.5

OTHER PURGEABLES

NOTE: SAMPLE QUANTITATED ON GC/MS

Completed-Date: 02/16/94 Time:19:43 By:CS

Unit supervisor Jay W. Dingman  
 Date 3-1-94  
 Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
 Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

Reporting Units, unless otherwise noted:  
 water, ug/l; sediment,ug/kg

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Landes Co.  
I.D./Site No. 33-633  
County 33 Field No. LC-SS-0-  
Stream Mile \_\_\_\_\_ Depth 2  
Collected Date 12-8-'14 Time 9:00 By DV  
Contact Hazard Unknown  
Signature of sampler Ron Van Hooch  
Send Report to Wayne Everett,  
CFO

<p><b>Sampling Agency</b></p> <p><input type="checkbox"/> APC    <input type="checkbox"/> DOT  <input type="checkbox"/> DWS    <input type="checkbox"/> GW  <input type="checkbox"/> SWM    <input type="checkbox"/> UST  <input type="checkbox"/> EEP    <input checked="" type="checkbox"/> PASI  <input checked="" type="checkbox"/> SF    <input type="checkbox"/> WPC  <input type="checkbox"/> other (specify):  <hr/></p>	<p><b>Sample Type</b></p> <p><input checked="" type="checkbox"/> Soil  <input type="checkbox"/> Sediment  <input type="checkbox"/> Water  <input type="checkbox"/> Other  <hr/></p>	<p><b>Sample Priority</b></p> <p><input type="checkbox"/> Emergency  <input checked="" type="checkbox"/> Legal  <input checked="" type="checkbox"/> Routine  <input type="checkbox"/> Ambient</p>
<p>Date/Priority needed:</p> <p><u>3/14/94</u></p>		
<p><b>Billing Code (required)</b></p> <p><u>327.38-11</u></p>		
<p><b>Field Comments:</b></p> <hr/>		

ORGANIC ANALYSIS

## Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number:

94020171

Date received

2/8/94

Time received

1455 by L.S.B.

Date reported

— — — — —

Reviewed by

	*	Halogenated
32104		bromoform
32101		bromodichloromethane
34413		bromomethane
32102		carbon tetrachloride
34301		chlorobenzene
34311		chloroethane
34576		2-chloroethylvinyl ether
32106		chloroform
34418		chloromethane
32105		dibromochloromethane
34536		1,2-dichlorobenzene
34566		1,3-dichlorobenzene
34571		1,4-dichlorobenzene
34668		dichlorodifluoromethane
34496		1,1-dichloroethane
34531		1,2-dichloroethane
34501		1,1-dichloroethene
		cis-1,2-dichloroethene
34546		trans-1,2-dichloroethene
34541		1,2-dichloropropane
34045		cis-1,3-dichloropropene
34699		trans-1,3-dichloropropene
34423		methylene chloride
34516		1,1,2,2-tetrachloroethane

\* please check desired parameters

Lab Comments: \_\_\_\_\_

## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

## Sample Custody

1. Collected by Don Van Hook Date 2/8/94 time 9:00 AM  
Delivered to Greyhound Date 2/8/94 time 10:00 AM
2. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
3. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
4. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
5. Received in Lab by Lew Garraure Date 2/8/94 time 1455  
Logged in by Lew Garraure Date 2/8/94 time 1455

## Additional information

7. Nearest town or city Chattanooga
8. Names of others present at time sample collected CLIFF SPENCER, CRAIG STANNARD
9. Approximate volume of sample 40 oz.
10. Number of other samples collected at same time at this point 0
11. Describe field collection procedure and special handling or preservation of this sample  
As per EPA guidelines and kept on ice at 4°C
12. Describe how sample transported to laboratory by bus
13. Sample sealed by Don Van Hook Date sample sealed 2/8/94
14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
 ENVIRONMENTAL LABORATORIES  
 ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
 Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.

Sample Site Code: 33-633

Sample Type: SOIL

County: 33

Field No: LC-SS-02

Collected-Date 02/08/94 Time 09:00 By DV

Date Priority Needed 03/14/94

Laboratory Number 94-02-0171

Branch Lab Number

Received-Date 02/08/94 Time 14:55 By LJB

Sampling Agency: HWM/11

CODE HALOGENATED PURGEABLES VALUE #

32104 BROMOFORM	U <0.1
32101 BROMODICHLOROMETHANE	U <0.1
34413 BROMOMETHANE	U <0.1
32102 CARBON TETRACHLORIDE	U <0.1
34301 CHLOROBENZENE	U <0.1
34311 CHLOROETHANE	U <0.1
34576 2-CHLOROETHYL VINYL ETHER	U <0.1
32106 CHLOROFORM	U <0.1
34418 CHLOROMETHANE	U <0.1
32105 DIBROMOCHLOROMETHANE	U <0.1
34536 1,2-DICHLOROBENZENE	U <0.1
34566 1,3-DICHLOROBENZENE	U <0.1
34571 1,4-DICHLOROBENZENE	U <0.1
34668 DICHLORODIFLUOROMETHANE	U <0.1
34496 1,1-DICHLOROETHANE	U <0.1
34531 1,2-DICHLOROETHANE	U <0.1
34501 1,1-DICHLOROETHENE	U <0.1
CIS-1,2-DICHLOROETHENE	U <0.1
34546 TRANS-1,2-DICHLOROETHENE	U <0.1
34541 1,2-DICHLOROPROPANE	U <0.1
34045 CIS-1,3-DICHLOROPROPENE	U <0.1
34699 TRANS-1,3-DICHLOROPROPENE	U <0.1
34423 METHYLENE CHLORIDE	0.6
34516 1,1,2,2-TETRACHLOROETHANE	U <0.1
34475 TETRACHLOROETHENE	U <0.1
34506 1,1,1-TRICHLOROETHANE	U <0.1
34511 1,1,2-TRICHLOROETHANE	U <0.1
39180 TRICHLOROETHENE	U <0.1
39488 TRICHLOROFUOROMETHANE	U <0.1
39715 VINYL CHLORIDE	U <0.1

CODE AROMATIC PURGEABLES VALUE #

34030 BENZENE	U <1.0
34301 CHLOROBENZENE	U <0.1
34536 1,2-DICHLOROBENZENE	U <0.1
34566 1,3-DICHLOROBENZENE	U <0.1
34571 1,4-DICHLOROBENZENE	U <0.1
34371 ETHYL BENZENE	U <1.0
34010 TOLUENE	U <1.0
O-XYLENE	U <1.0
M-XYLENE & P-XYLENE	U <1.0

OTHER PURGEABLES

Completed-Date: 02/18/94 Time:15:40 By:SDM

Unit supervisor Jewi. Binger  
 Date 3-1-94  
 Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
 Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

#Reporting Units, unless otherwise noted:

water, ug/l; sediment,ug/kg

**STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES**

Sample Source Lander Co.  
I.D./Site No 33-633  
County 33 Field No. LC-55-03  
Stream Mile \_\_\_\_\_ Depth 2"  
Collected Date 2-8-94 Time 9:10 AM By CJS  
Contact Hazard Unknown  
Signature of sampler Craig Hamner  
Send Report to Wayne Everett  
CFO

<b>Sampling Agency</b> <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): <hr/> <hr/>	<b>Sample Type</b> <input checked="" type="checkbox"/> Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Water <input type="checkbox"/> Other <hr/>	<b>Sample Priority</b> <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient  <b>Date Priority needed:</b> <hr/> <hr/>
<b>Billing Code (required)</b> <hr/> <div style="border: 1px solid black; padding: 2px; display: inline-block;"> <b>327.38-11</b> </div>		<b>Field Comments:</b> <hr/> <hr/>

**ORGANIC ANALYSIS**  
**Purgeables and Petroleum Hydrocarbons**

For lab use only

Laboratory Number 94020112

Date received 2/8/94

Time received 1955 by LJSB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

	*	Halogenated
32104		bromoform
32101		bromodichloromethane
34413		bromomethane
32102		carbon tetrachloride
34301	✓	chlorobenzene
34311		chloroethane
34576		2-chloroethylvinyl ether
32106		chloroform
34418		chloromethane
32105		dibromochloromethane
34536		1,2-dichlorobenzene
34566		1,3-dichlorobenzene
34571		1,4-dichlorobenzene
34668	✓	dichlorodifluoromethane
34496		1,1-dichloroethane
34531		1,2-dichloroethane
34501		1,1-dichloroethene
		cis-1,2-dichloroethene
34546		trans-1,2-dichloroethene
34541		1,2-dichloropropane
34045		cis-1,3-dichloropropene
34699		trans-1,3-dichloropropene
34423		methylene chloride
34516	✓	1,1,2,2-tetrachloroethane

\* please check desired parameters

Lab Comments: \_\_\_\_\_

## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

## Sample Custody

1. Collected by \_\_\_\_\_  
Delivered to \_\_\_\_\_

*Gray Stannard*  
*Gray Stannard*

Date 2/8/94 time 9:10 AM  
Date 2/8/94 time 10:00 AM

2. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

3. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

4. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

5. Received in Lab by Lee Garrison  
6. Logged in by Lee Garrison

Date 2/8/94 time 1455  
Date 2/8/94 time 1455

## Additional information

7. Nearest town or city Chattanooga

8. Names of others present at time sample collected Art Spach, Don Van Hook

9. Approximate volume of sample 40 oz.

10. Number of other samples collected at same time at this point 0

11. Describe field collection procedure and special handling or preservation of this sample

*As per EPA guidelines and kept on ice at  
4°C*

12. Describe how sample transported to laboratory by bus

13. Sample sealed by Gray Stannard Date sample sealed 2/8/94

14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS. PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SOIL  
County: 33  
Field No: LC-SS-03  
Collected-Date 02/08/94 Time 09:10 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0172  
Branch Lab Number  
Received-Date 02/08/94 Time 14:55 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 0.1
32101	BROMODICHLOROMETHANE	U < 0.1
34413	BROMOMETHANE	U < 0.1
32102	CARBON TETRACHLORIDE	U < 0.1
34301	CHLOROBENZENE	U < 0.1
34311	CHLOROETHANE	U < 0.1
34576	2-CHLOROETHYL VINYL ETHER	U < 0.1
32106	CHLOROFORM	U < 0.1
34418	CHLORMETHANE	U < 0.1
32105	DIBROMOCHLOROMETHANE	U < 0.1
34536	1,2-DICHLOROBENZENE	U < 0.1
34566	1,3-DICHLOROBENZENE	U < 0.1
34571	1,4-DICHLOROBENZENE	U < 0.1
34668	DICHLORODIFLUOROMETHANE	U < 0.1
34496	1,1-DICHLOROETHANE	U < 0.1
34531	1,2-DICHLOROETHANE	U < 0.1
34501	1,1-DICHLOROETHENE	U < 0.1
	CIS-1,2-DICHLOROETHENE	U < 0.1
34546	TRANS-1,2-DICHLOROETHENE	U < 0.1
34541	1,2-DICHLOROPROPANE	U < 0.1
34045	CIS-1,3-DICHLOROPROPENE	U < 0.1
34699	TRANS-1,3-DICHLOROPROPENE	U < 0.1
34423	METHYLENE CHLORIDE	2.8
34516	1,1,2,2-TETRACHLOROETHANE	U < 0.1
34475	TETRACHLOROETHENE	U < 0.1
34506	1,1,1-TRICHLOROETHANE	U < 0.1
34511	1,1,2-TRICHLOROETHANE	U < 0.1
39180	TRICHLOROETHENE	U < 0.1
39488	TRICHLOROFLUOROMETHANE	U < 0.1
39715	VINYL CHLORIDE	U < 0.1

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	U < 1.0
34301	CHLOROBENZENE	U < 0.1
34536	1,2-DICHLOROBENZENE	U < 0.1
34566	1,3-DICHLOROBENZENE	U < 0.1
34571	1,4-DICHLOROBENZENE	U < 0.1
34371	ETHYL BENZENE	U < 1.0
34010	TOLUENE	PI < 1.0
	O-XYLENE	U < 1.0
	M-XYLENE & P-XYLENE	U < 1.0

## OTHER PURGEABLES

Completed-Date: 02/18/94 Time:16:30 By:SDM

Unit supervisor Jerry W. Baumgardner  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

~~Reporting Units, unless otherwise noted:~~  
water, ug/l; sediment,ug/kg

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<i>Lander Co.</i>		
I.D./Site No	<i>33-633</i>		
County	<i>33</i>	Field No.	<i>LC-55-04</i>
Stream Mile	<i>33</i>	Depth	<i>2 "</i>
Collected Date	<i>2/8/94</i>	Time	<i>9:20 AM</i>
Contact Hazard	<i>Unknown</i>		
Signature of sampler	<i>and I speak for</i>		
Send Report to	<i>Wayne Everett, CFO</i>		

Sampling Agency	APC	DOT
DWS	GW	
SWM	UST	
EEP	<input checked="" type="checkbox"/> PASI	
SF	<input checked="" type="checkbox"/> WPC	
other (specify): _____		
Billing Code (required)		
<i>327.38-11</i>		
Sample Type	<input checked="" type="checkbox"/> Soil	<input type="checkbox"/> Sediment
	<input type="checkbox"/> Water	<input type="checkbox"/> Other
Sample Priority	<input type="checkbox"/> Emergency	<input checked="" type="checkbox"/> Legal
	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Ambient
Date Priority needed:	<i>3/14/94</i>	
Field Comments:	_____	

**ORGANIC ANALYSIS**  
**Purgeables and Petroleum Hydrocarbons**

For lab use only  
 Laboratory Number *09020173*  
 Date received *2/8/94*  
 Time received *1955* by *LSP*  
 Date reported \_\_\_\_\_ by \_\_\_\_\_  
 Reviewed by \_\_\_\_\_

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	<input checked="" type="checkbox"/> dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	<input checked="" type="checkbox"/> 1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	<input checked="" type="checkbox"/> 1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	<input checked="" type="checkbox"/> vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	<input checked="" type="checkbox"/> ethylbenzene
34010	toluene
	<i>o-xylene</i>
	<i>m-xylene</i>
	<i>p-xylene</i>

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

## Sample Custody

1. Collected by Curtis Spangler Date 2/8/94 time 9:20 AM  
Delivered to Greys Harbor Date 2/8/94 time 10:00 AM
2. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
3. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
4. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
5. Received in Lab by Les Barrociere Date 2/8/94 time 1455  
6. Logged in by Les Barrociere Date 2/8/94 time 1455

## Additional information

7. Nearest town or city Chattanooga
8. Names of others present at time sample collected Don Van Hook, Denis Stannard
9. Approximate volume of sample 40 oz.
10. Number of other samples collected at same time at this point 0
11. Describe field collection procedure and special handling or preservation of this sample  
As per EPA guidelines and kept on ice  
at 4°C
12. Describe how sample transported to laboratory by bus
13. Sample sealed by Curtis Spangler Date sample sealed 2/8/94
14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SOIL  
County: 33  
Field No: LC-SS-04  
Collected-Date 02/08/94 Time 09:20 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0173  
Branch Lab Number  
Received-Date 02/08/94 Time 14:55 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 0.1
32101	BROMODICHLOROMETHANE	U < 0.1
34413	BROMOMETHANE	U < 0.1
32102	CARBON TETRACHLORIDE	U < 0.1
34301	CHLOROBENZENE	U < 0.1
34311	CHLOROETHANE	U < 0.1
34576	2-CHLOROETHYL VINYL ETHER	U < 0.1
32106	CHLOROFORM	U < 0.1
34418	CHLORMETHANE	U < 0.1
32105	DIBROMOCHLOROMETHANE	U < 0.1
34536	1,2-DICHLOROBENZENE	U < 0.1
34566	1,3-DICHLOROBENZENE	U < 0.1
34571	1,4-DICHLOROBENZENE	U < 0.1
34668	DICHLORODIFLUOROMETHANE	U < 0.1
34496	1,1-DICHLOROETHANE	U < 0.1
34531	1,2-DICHLOROETHANE	U < 0.1
34501	1,1-DICHLOROETHENE	U < 0.1
	CIS-1,2-DICHLOROETHENE	U < 0.1
34546	TRANS-1,2-DICHLOROETHENE	U < 0.1
34541	1,2-DICHLOROPROPANE	U < 0.1
34045	CIS-1,3-DICHLOROPROPENE	U < 0.1
34699	TRANS-1,3-DICHLOROPROPENE	U < 0.1
34423	METHYLENE CHLORIDE	0.8
34516	1,1,2,2-TETRACHLOROETHANE	U < 0.1
34475	TETRACHLOROETHENE	U < 0.1
34506	1,1,1-TRICHLOROETHANE	U < 0.1
34511	1,1,2-TRICHLOROETHANE	U < 0.1
39180	TRICHLOROETHENE	U < 0.1
39488	TRICHLOROFLUOROMETHANE	U < 0.1
39715	VINYL CHLORIDE	U < 0.1

CODE	AROMATIC PURGEABLES	VALUE	%
34030	BENZENE	PI	<1.0
34301	CHLOROBENZENE	U	<0.1
34536	1,2-DICHLOROBENZENE	U	<0.1
34566	1,3-DICHLOROBENZENE	U	<0.1
34571	1,4-DICHLOROBENZENE	U	<0.1
34371	ETHYL BENZENE	U	<1.0
34010	TOLUENE	PI	<1.0
	O-XYLENE	U	<1.0
	M-XYLENE & P-XYLENE	U	<1.0

## OTHER PURGEABLES

Completed-Date: 02/18/94 Time:17:20 By:SDM

Unit supervisor Jerry W. Binger  
Date 3-1-94

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Lander Co.  
ID./Site No. 33-633  
County 33 Field No. LC-55-05  
Stream Mile \_\_\_\_\_ Depth 1"  
Collected Date 2-7-94 Time 1:10 PM By CJS  
Contact Hazard Unknown  
Signature of sampler Raymond  
Send Report to Wayne Everett  
(CFO)

<p><b>Sampling Agency</b></p> <p><input type="checkbox"/> APC    <input type="checkbox"/> DOT  <input type="checkbox"/> DWS    <input type="checkbox"/> GW  <input type="checkbox"/> SWM    <input type="checkbox"/> UST  <input type="checkbox"/> EEP    <input checked="" type="checkbox"/> PASI  <input checked="" type="checkbox"/> SF    <input type="checkbox"/> WPC  <input type="checkbox"/> other (specify):  <hr/> </p>	<p><b>Sample type</b></p> <p><input checked="" type="checkbox"/> Soil  <input type="checkbox"/> Sediment  <input type="checkbox"/> Water  <input type="checkbox"/> Other  <hr/> </p>	<p><b>Sample Priority</b></p> <p><input checked="" type="checkbox"/> Emergency  <input checked="" type="checkbox"/> Legal  <input checked="" type="checkbox"/> Routine  <input type="checkbox"/> Ambient</p> <p>Date Priority needed:  <hr/> </p>
<p><b>Billing Code (required)</b></p> <p><b>327.38-11</b></p> <p><b>Field Comments:</b>  <hr/> </p>		

## **ORGANIC ANALYSIS**

For lab use only

Laboratory Number 402047

Date received 2/8/94

Time received 1010 by LBB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

	*	Halogenated
32104		bromoform
32101		bromodichloromethane
34413		bromomethane
32102	✓	carbon tetrachloride
34301		chlorobenzene
34311		chloroethane
34576		2-chloroethylvinyl ether
32106		chloroform
34418		chloromethane
32105		dibromochloromethane
34536		1,2-dichlorobenzene
34566		1,3-dichlorobenzene
34571	✓	1,4-dichlorobenzene
34668		dichlorodifluoromethane
34496		1,1-dichloroethane
34531		1,2-dichloroethane
34501		1,1-dichloroethene
		cis-1,2-dichloroethene
34546		trans-1,2-dichloroethene
34541		1,2-dichloropropane
34045		cis-1,3-dichloropropene
34699		trans-1,3-dichloropropene
34423		methylene chloride
34516	✓	1,1,2,2-tetrachloroethane

\* please check desired parameters

Lab Comments:

## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

## Sample Custody

1. Collected by \_\_\_\_\_  
Delivered to \_\_\_\_\_

*Gary Hammar  
Ground*

Date 2-7-94 time 1:10 PM  
Date 2-7-94 time 4:00 PM

2. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

3. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

4. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

5. Received in Lab by Lev Boracene  
6. Logged in by Lev Boracene

Date 2/8/94 time 1010  
Date 2/8/94 time 1010

## Additional information

7. Nearest town or city Chattanooga

8. Names of others present at time sample collected Art Smith, Don Van Hook

9. Approximate volume of sample 40 oz.

10. Number of other samples collected at same time at this point 1

11. Describe field collection procedure and special handling or preservation of this sample

*As per EPA guidelines and kept on ice at  
4°C*

12. Describe how sample transported to laboratory by bus

13. Sample sealed by Gary Hammar Date sample sealed 2-7-94

14. Remarks ( )

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SOIL  
County: 33  
Field No: LC-3S-05  
Collected-Date 02/07/94 Time 13:10 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0147  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLORMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	PI < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

**OTHER PURGEABLES**

NOTE: SAMPLE QUANTITATED ON GC/MS

Completed-Date: 02/15/94 Time: 20:19 By: CS

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Dingman  
Date 3-1-74  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Landes Co.  
 ID/Site No. 33-633  
 County 33 Field No LC-55-06  
 Stream Mile \_\_\_\_\_ Depth 1"  
 Collected: Date 12-7-94 Time 120pm By CDS  
 Contact Hazard Unknown?  
 Signature of sampler Wayne Everett  
 Send Report to Wayne Everett  
CFO

Sampling Agency	Sample Type	Sample Priority
<input type="checkbox"/> APC	<input checked="" type="checkbox"/> Soil	Emergency
<input type="checkbox"/> DWS	<input type="checkbox"/> Sediment	<input checked="" type="checkbox"/> Legal
<input type="checkbox"/> SWM	<input type="checkbox"/> Water	<input checked="" type="checkbox"/> Routine
<input type="checkbox"/> EEP	<input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Ambient
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> WPC	
other (specify): _____		
Billing Code (required)		Date Priority needed:
<u>327.38-11</u>		<u>3/14/94</u>
Field Comments: _____		

ORGANIC ANALYSIS  
 Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 9402048Date received 2/8/94Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene
	:
	Other

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

### CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

**Note for samplers:** Only one chain of custody form is required per sample set or site (if all collected at the same time).

#### Sample Custody

1. Collected by Craig Starnard Date 12-7-93 time 1:20 pm  
Delivered to Greyhound Date 12-7-93 time 1:20 pm
2. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
3. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
4. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
5. Received in Lab by Leo Barocure Date 2/8/94 time 10:10  
Logged in by Leo Barocure Date 2/8/94 time 10:10

#### Additional information

7. Nearest town or city Chattanooga
8. Names of others present at time sample collected Dn Vintek, Carl Spiegel
9. Approximate volume of sample 40 oz.
10. Number of other samples collected at same time at this point 1
11. Describe field collection procedure and special handling or preservation of this sample  
As per EPA guidelines and kept on ice at 4°C

12. Describe how sample transported to laboratory by bus
13. Sample sealed by Craig Starnard Date sample sealed 12-7-93
14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
 ENVIRONMENTAL LABORATORIES  
 ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
 Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
 Sample Site Code: 33-633  
 Sample Type: SOIL  
 County: 33  
 Field No: LC-SS-06  
 Collected-Date 02/07/94 Time 13:20 By CJS  
 Date Priority Needed 03/14/94

Laboratory Number 94-02-0148  
 Branch Lab Number  
 Received-Date 02/08/94 Time 10:10 By LJB  
 Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE Q
32104	BROMOFORM	U <2.5
32101	BROMODICHLOROMETHANE	U <2.5
34413	BROMOMETHANE	U <5.0
32102	CARBON TETRACHLORIDE	U <2.5
34301	CHLOROBENZENE	U <2.5
34311	CHLOROETHANE	U <5.0
34576	2-CHLOROETHYL VINYL ETHER	U <2.5
32106	CHLOROFORM	U <2.5
34418	CHLOROMETHANE	U <5.0
32105	DIBROMOCHLOROMETHANE	U <2.5
34536	1,2-DICHLOROBENZENE	U <2.5
34566	1,3-DICHLOROBENZENE	U <2.5
34571	1,4-DICHLOROBENZENE	U <2.5
34668	DICHLORODIFLUOROMETHANE	U <5.0
34496	1,1-DICHLOROETHANE	U <2.5
34531	1,2-DICHLOROETHANE	U <2.5
34501	1,1-DICHLOROETHENE	U <2.5
	CIS-1,2-DICHLOROETHENE	U <2.5
34546	TRANS-1,2-DICHLOROETHENE	U <2.5
34541	1,2-DICHLOROPROPANE	U <2.5
34045	CIS-1,3-DICHLOROPROPENE	U <2.5
34699	TRANS-1,3-DICHLOROPROPENE	U <2.5
34423	METHYLENE CHLORIDE	U <2.5
34516	1,1,2,2-TETRACHLOROETHANE	U <2.5
34475	TETRACHLOROETHENE	U <2.5
34506	1,1,1-TRICHLOROETHANE	U <2.5
34511	1,1,2-TRICHLOROETHANE	U <2.5
39180	TRICHLOROETHENE	U <2.5
39488	TRICHLOROFUOROMETHANE	U <5.0
39715	VINYL CHLORIDE	U <5.0

CODE	AROMATIC PURGEABLES	VALUE Q
34030	BENZENE	U <2.5
34301	CHLOROBENZENE	U <2.5
34536	1,2-DICHLOROBENZENE	U <2.5
34566	1,3-DICHLOROBENZENE	U <2.5
34571	1,4-DICHLOROBENZENE	U <2.5
34371	ETHYL BENZENE	U <2.5
34010	TOLUENE	U <2.5
	O-XYLENE	U <2.5
	M-XYLENE & P-XYLENE	U <2.5

OTHER PURGEABLES

Completed-Date: 02/16/94 Time:20:54 By:CS

Unit supervisor Jerry W. Biggane  
 Date 3-1-94  
 Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
 Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

Reporting Units, unless otherwise noted:  
 water, ug/l; sediment,ug/kg

**STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES**

Sample Source andes Co.  
ID/Site No. 33-633  
County 33 Field No. LC-SD-01  
Stream Mile \_\_\_\_\_ Depth 2"  
Collected Date 2-7-94 Time 8:30 By CSS  
Contact Hazard Unknowzy  
Signature of sampler Tom Slomka  
Send Report to Wayne Everett,  
CFO

<p><b>Sampling Agency</b></p> <p><input type="checkbox"/> APC    <input type="checkbox"/> DOT  <input type="checkbox"/> DWS    <input type="checkbox"/> GW  <input type="checkbox"/> SWM    <input type="checkbox"/> UST  <input type="checkbox"/> EEP    <input checked="" type="checkbox"/> PASI  <input checked="" type="checkbox"/> SF    <input type="checkbox"/> WPC  <input type="checkbox"/> other (specify):  <hr/><hr/></p>	<p><b>Sample</b></p> <p><input type="checkbox"/> Soil  <input checked="" type="checkbox"/> Sediment  <input type="checkbox"/> Water  <input type="checkbox"/> Other  <hr/><hr/></p>	<p><b>Sample Priority</b></p> <p><input type="checkbox"/> Emergency  <input checked="" type="checkbox"/> Legal  <input checked="" type="checkbox"/> Routine  <input type="checkbox"/> Ambient</p>
<p><b>Date Priority needed:</b></p> <p><u>3/14/94</u></p>		
<p><b>Field Comments:</b></p> <hr/> <hr/>		

ORGANIC ANALYSIS

## Purgeables and Petroleum II Hydrocarbons

For lab use only

Laboratory Number

Date received

Type received

Data requests

Reviewed by

	*	Halogenated
32104		bromoform
32101		bromodichloromethane
34413		bromomethane
32102		carbon tetrachloride
34301		chlorobenzene
34311		chloroethane
34573		2-chloroethylvinyl ether
32106		chloroform
34418		chloromethane
32105		dibromochloromethane
34536		1,2-dichlorobenzene
34566		1,3-dichlorobenzene
34571		1,4-dichlorobenzene
34668		dichlorodifluoromethane
34496		1,1-dichloroethane
34531		1,2-dichloroethane
34501		1,1-dichloroethene
34546		cis-1,2-dichloroethene
34541		trans-1,2-dichloroethene
34045		1,2-dichloropropane
34699		cis-1,3-dichloropropene
34423		trans-1,3-dichloropropene
34516		methylene chloride
34516	V	1,1,2,2-tetrachloroethane

\* please check desired parameters

Lab Comments: \_\_\_\_\_

## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

## Sample Custody

1. Collected by \_\_\_\_\_  
Delivered to \_\_\_\_\_

*Ray Slarrow*  
*Greyhound*

Date 2-7-94 time 8:30 AM  
Date 2/7/94 time 4:00 PM

2. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

3. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

4. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

5. Received in Lab by Lev Barracire  
6. Logged in by Lev Barracire

Date 2/8/94 time 10:10  
Date 2/8/94 time 10:10

## Additional information

7. Nearest town or city Chattanooga

8. Names of others present at time sample collected Don VANHOOK, Curt Spaeth

9. Approximate volume of sample 40 oz

10. Number of other samples collected at same time at this point 0

11. Describe field collection procedure and special handling or preservation of this sample

*As per EPA guidelines and kept on ice at  
4°C.*

12. Describe how sample transported to laboratory by bus

13. Sample sealed by Ray Slarrow Date sample sealed 2-7-94

14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SEDIMENT  
County: 33  
Field No: LC-SD-01  
Collected-Date 02/07/94 Time 08:30 By CJS  
Date Priority Needed 03/11/94

Laboratory Number 94-02-0141  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U <2.5
32101	BROMODICHLOROMETHANE	U <2.5
34413	BROMOMETHANE	U <5.0
32102	CARBON TETRACHLORIDE	U <2.5
34301	CHLOROBENZENE	U <2.5
34311	CHLOROETHANE	U <5.0
34576	2-CHLOROETHYL VINYL ETHER	U <2.5
32106	CHLOROFORM	U <2.5
34418	CHLOROMETHANE	U <5.0
32105	DIBROMOCHLOROMETHANE	U <2.5
34536	1,2-DICHLOROBENZENE	U <2.5
34566	1,3-DICHLOROBENZENE	U <2.5
34571	1,4-DICHLOROBENZENE	U <2.5
34668	DICHLORODIFLUOROMETHANE	U <5.0
34496	1,1-DICHLOROETHANE	U <2.5
34531	1,2-DICHLOROETHANE	U <2.5
34501	1,1-DICHLOROETHENE	U <2.5
	CIS-1,2-DICHLOROETHENE	U <2.5
34546	TRANS-1,2-DICHLOROETHENE	U <2.5
34541	1,2-DICHLOROPROPANE	U <2.5
34045	CIS-1,3-DICHLOROPROPENE	U <2.5
34699	TRANS-1,3-DICHLOROPROPENE	U <2.5
34423	METHYLENE CHLORIDE	U <2.5
34516	1,1,2,2-TETRACHLOROETHANE	U <2.5
34475	TETRACHLOROETHENE	U <2.5
34506	1,1,1-TRICHLOROETHANE	U <2.5
34511	1,1,2-TRICHLOROETHANE	U <2.5
39180	TRICHLOROETHENE	U <2.5
39488	TRICHLOROFLUOROMETHANE	U <5.0
39715	VINYL CHLORIDE	U <5.0

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	3.3
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	P1<2.5

**OTHER PURGEABLES**

NOTE: SAMPLE QUANTITATED ON GC/MS

Completed-Date: 02/16/94 Time:16:48 By:CS

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source arkles Co.  
 ID/Site No 33-633  
 County 33 Field No LC-SD-02  
 Stream Mile \_\_\_\_\_ Depth 4"  
 Collected Date 2-7-94 Time 8:55 By CJS  
 Contact Hazard Unknown  
 Signature of sampler Wayne Everett  
 Send Report to CFO

Sampling Agency  
 APC  DOT  
 DWS  GW  
 SWM  UST  
 HEP  PASI  
 SF  WPC  
 other (specify): \_\_\_\_\_

Billing Code (required)

327.38-11

Sample Type  
 Soil  
 Sediment  
 Water  
 Other

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient

Date Priority needed:  
3/14/94Field Comments: \_\_\_\_\_  
\_\_\_\_\_ORGANIC ANALYSIS  
Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 94020A2Date received 2/8/94Time received 10:10 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Halogenated
32104	bromoform
32101	bromodichloromethane
34113	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34500	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	v vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

## Other

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

**Note for samplers:** Only one chain of custody form is required per sample set or site (if all collected at the same time).

### Sample Custody

1. Collected by Craig Standard Date 2/7/94 time 8:55 AM  
Delivered to Greyhound Date 2/7/94 time 4:00 PM
2. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
3. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
4. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
5. Received in Lab by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Logged in by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_

### Additional information

7. Nearest town or city Chattanooga
8. Names of others present at time sample collected Don VanHout, Carl Specht
9. Approximate volume of sample 40 oz.
10. Number of other samples collected at same time at this point 0
11. Describe field collection procedure and special handling or preservation of this sample  
As per EPA guidelines and kept on ice at 4°C
12. Describe how sample transported to laboratory by bus
13. Sample sealed by Craig Standard Date sample sealed 2-7-94
14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SEDIMENT  
County: 33  
Field No: LC-SD-02  
Collected-Date 02/07/94 Time 08:55 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0142

Branch Lab Number

Received-Date 02/08/94 Time 10:10 By LJB

Sampling Agency: HWM/11

**CODE HALOGENATED PURGEABLES**      **VALUE A**

32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34515	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

**OTHER PURGEABLES**

Completed Date: 02/16/94 Time: 17:23 By: C

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-81  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORY

Sample Source Ashley Co.ID/Site No. 33-633County 33 Field No. LC-SD-03Stream Mile \_\_\_\_\_ Depth 1"Collected: Date 7/14 Time 11:10 By CSSContact Hazard HazardousSignature of sampler Ray L. LampertSend Report to Wayne Everett

CFO

Sampling Agency  
 APC    DOT  
 DWS    GW  
 SWM    UST  
 EEP    PASI  
 SF    WPC  
 other (specify): \_\_\_\_\_

Sample Type  
 Soil    Sediment  
 Water    Other

Sample Priority  
 Emergency  
 Legal    Routine  
 Ambient  
 Other  
Date Priority needed: 7/14/94

Billing Code (required)

327.38-11

Field Comments: \_\_\_\_\_

ORGANIC ANALYSIS  
Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number 94020143Date received 2/8/94Time received 10:00 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Halogenated
32101	bromoform
32101	bromodichloromethane
34113	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

*	Halogenated
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	v vinyl chloride

*	Aromatic
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

## Other

*	Petroleum Hydrocarbons
	Gasoline Range Organics
	Diesel Range Organics
	Additives:
	Methyl tert-butyl ether
	diisopropyl ether

\* please check desired parameters

Lab Comments: \_\_\_\_\_

## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

## Sample Custody

1. Collected by \_\_\_\_\_  
Delivered to \_\_\_\_\_

*Craig Hamard*  
*Greyhound*

Date 2/7/94 time 9:10 AM  
Date 2/7/94 time 4:00 PM

2. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

3. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

4. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

5. Received in Lab by Lev Garrosire  
6. Logged in by Lev Garrosire

Date 2/8/94 time 1010  
Date 2/8/94 time 1010

## Additional information

7. Nearest town or city Chattanooga

8. Names of others present at time sample collected Don VanHock, Carl Spaeth

9. Approximate volume of sample 40 oz.

10. Number of other samples collected at same time at this point 0

11. Describe field collection procedure and special handling or preservation of this sample

*As per EPA guidelines and kept on ice  
at 4°C.*

12. Describe how sample transported to laboratory by bus

13. Sample sealed by Craig Hamard Date sample sealed 2-7-94

14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SEDIMENT  
County: 33  
Field No: LC-SD-03  
Collected-Date 02/07/94 Time 09:10 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0143  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

**CODE HALOGENATED PURGEABLES**

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

## OTHER PURGEABLES

32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	0.8
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

Completed-Date: 02/16/94 Time: 17:58 By: CS

Unit supervisor Jerry W. Bingham  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg



## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

## Sample Custody

1. Collected by \_\_\_\_\_  
Delivered to \_\_\_\_\_

*Craig Starnard  
Greyhound*

Date 2-7-94 time 10:15 AM  
Date 2/7/94 time 4:00 PM

2. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

3. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

4. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

5. Received in Lab by Les Baranec  
6. Logged in by Les Baranec

Date 2/8/94 time 10:10  
Date 2/8/94 time 10:10

## Additional information

7. Nearest town or city Chattanooga  
8. Names of others present at time sample collected Curt Spach, Don VanHook  
9. Approximate volume of sample 40 oz.  
10. Number of other samples collected at same time at this point 0  
11. Describe field collection procedure and special handling or preservation of this sample  
*As per EPA guidelines and kept on ice at 4°C*

12. Describe how sample transported to laboratory by bus  
13. Sample sealed by Craig Starnard Date sample sealed 2-7-94  
14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SEDIMENT  
County: 33  
Field No: LC-SD-04  
Collected-Date 02/08/94 Time 10:15 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0144  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34663	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	U <2.5
34301	CHLOROBENZENE	U <2.5
34536	1,2-DICHLOROBENZENE	U <2.5
34566	1,3-DICHLOROBENZENE	U <2.5
34571	1,4-DICHLOROBENZENE	U <2.5
34371	ETHYL BENZENE	U <2.5
34010	TOLUENE	U <2.5
	O-XYLENE	U <2.5
	M-XYLENE & P-XYLENE	U <2.5

**OTHER PURGEABLES**

Completed-Date: 02/16/94 Time:18:33 By:CS

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-94

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## SOCIAL OF TRUSTWORTHY - ENVIRONMENTAL LABORATORIES

Sample Source andes lo.  
ID / Site No 33-633  
County 33 Field No LC-SD-05  
Stream Mile \_\_\_\_\_ Depth 2"  
Collected Date 2/7/94 Time 2:00 PM By CJS  
Contact Hazard Unknown  
Signature of sampler Ray Slattery  
Send Report to Wayne Everett  
C.F.C.

<p>Sampling Agency</p> <p><input type="checkbox"/> APC    <input type="checkbox"/> DOT  <input type="checkbox"/> DWS    <input type="checkbox"/> GW  <input type="checkbox"/> SWM    <input type="checkbox"/> UST  <input checked="" type="checkbox"/> EEP    <input checked="" type="checkbox"/> PASI  <input checked="" type="checkbox"/> SF    <input type="checkbox"/> WPC  <input type="checkbox"/> other (specify): _____</p>	<p>Sample Type</p> <p><input type="checkbox"/> Soil  <input checked="" type="checkbox"/> Sediment  <input type="checkbox"/> Water  <input type="checkbox"/> Other _____</p>	<p>Sample Priority</p> <p><input type="checkbox"/> Emergency  <input checked="" type="checkbox"/> Legal  <input checked="" type="checkbox"/> Routine  <input type="checkbox"/> Ambient</p>
		Date Priority needed:
<p><u>3/14/94</u></p>		
<p>Billing Code (required)</p> <p><u>327.38-11</u></p>		
<p>Field Comments: _____</p>		

ORGANIC ANALYSIS

Purgeables and Petroleum II (ocarbon)

*For lab use only*

Laboratory Number 9A020145

Date received 2/8/94

Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by

	Halogenated
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
34546	cis-1,2-dichloroethene
34541	trans-1,2-dichloroethene
34546	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

\* please check desired parameters

### Lab Comments:

### CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

**Note for samplers:** Only one chain of custody form is required per sample set or site (if all collected at the same time)

#### Sample Custody

1. Collected by \_\_\_\_\_  
Delivered to \_\_\_\_\_

*Craig Stannard*  
~~Craig Stannard~~  
*Greyhound*

Date 2-7-94 time 2:00 PM  
Date 2-7-94 time 4:00 PM

2. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

3. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

4. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

5. Received in Lab by Lee Parrocire  
6. Logged in by Lee Parrocire

Date 2/8/94 time 1010  
Date 2/8/94 time 1010

#### Additional information

7. Nearest town or city Chattanooga

8. Names of others present at time sample collected Art Speath, Don Van Hook

9. Approximate volume of sample 40 oz.

10. Number of other samples collected at same time at this point 0

11. Describe field collection procedure and special handling or preservation of this sample

*As per EPA guidelines and kept on ice at  
4°C*

12. Describe how sample transported to laboratory

13. Sample sealed by Craig Stannard Date sample sealed 2-7-94

14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS. PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: SEDIMENT  
County: 33  
Field No: LC-SD-05  
Collected-Date 02/07/94 Time 14:00 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0145

Branch Lab Number

Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE	%
34030	BENZENE	U <2.5	
34301	CHLOROBENZENE	U <2.5	
34536	1,2-DICHLOROBENZENE	U <2.5	
34566	1,3-DICHLOROBENZENE	U <2.5	
34571	1,4-DICHLOROBENZENE	U <2.5	
34371	ETHYL BENZENE	U <2.5	
34010	TOLUENE	U <2.5	
	O-XYLENE	U <2.5	
	M-XYLENE & P-XYLENE	U <2.5	

## OTHER PURGEABLES

NOTE: SAMPLE QUANTITATED ON GC/MS

Completed-Date: 02/16/94 Time:12:38 By:CS

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Boggan  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.



## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

**Note for samplers:** Only one chain of custody form is required per sample set or site (if all collected at the same time).

### Sample Custody

1. Collected by \_\_\_\_\_  
Delivered to \_\_\_\_\_

*Craig Flannard  
Greyhound*

Date 2/7/94 time 10:40 AM  
Date 2/7/94 time 4:00 PM

2. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

3. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

4. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

5. Received in Lab by Lev Barracure  
6. Logged in by Lev Barracure

Date 2/8/94 time 1010  
Date 2/8/94 time 1010

### Additional information

7. Nearest town or city Chattanooga

8. Names of others present at time sample collected Art Spaeth, Don Van Hook

9. Approximate volume of sample 40 oz.

10. Number of other samples collected at same time at this point 0

11. Describe field collection procedure and special handling or preservation of this sample

*As per EPA guidelines and kept on ice at  
4°C*

12. Describe how sample transported to laboratory by bus

13. Sample sealed by Craig Flannard Date sample sealed 2/7/94

14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: WASTE  
County: 33  
Field No: LC-WS-01  
Collected-Date 02/07/94 Time 10:40 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0149  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE	%
32104	BROMOFORM	U < 2.5	
32101	BROMODICHLOROMETHANE	U < 2.5	
34413	BROMOMETHANE	U < 5.0	
32102	CARBON TETRACHLORIDE	U < 2.5	
34301	CHLOROBENZENE	U < 2.5	
34311	CHLOROETHANE	U < 5.0	
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5	
32106	CHLOROFORM	U < 2.5	
34418	CHLOROMETHANE	U < 5.0	
32105	DIBROMOCHLOROMETHANE	U < 2.5	
34536	1,2-DICHLOROBENZENE	U < 2.5	
34566	1,3-DICHLOROBENZENE	U < 2.5	
34571	1,4-DICHLOROBENZENE	U < 2.5	
34668	DICHLORODIFLUOROMETHANE	U < 5.0	
34496	1,1-DICHLOROETHANE	U < 2.5	
34531	1,2-DICHLOROETHANE	U < 2.5	
34501	1,1-DICHLOROETHENE	U < 2.5	
	CIS-1,2-DICHLOROETHENE	U < 2.5	
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5	
34541	1,2-DICHLOROPROPANE	U < 2.5	
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5	
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5	
34423	METHYLENE CHLORIDE	3.4	
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5	
34475	TETRACHLOROETHENE	U < 2.5	
34506	1,1,1-TRICHLOROETHANE	U < 2.5	
34511	1,1,2-TRICHLOROETHANE	U < 2.5	
39180	TRICHLOROETHENE	U < 2.5	
39488	TRICHLOROFLUOROMETHANE	U < 5.0	
39715	VINYL CHLORIDE	U < 5.0	

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	J < 2.5
34301	CHLOROBENZENE	J < 2.5
34536	1,2-DICHLOROBENZENE	J < 2.5
34566	1,3-DICHLOROBENZENE	J < 2.5
34571	1,4-DICHLOROBENZENE	J < 2.5
34371	ETHYL BENZENE	J < 2.5
34010	TOLUENE	J < 2.5
	O-XYLENE	J < 2.5
	M-XYLENE & P-XYLENE	J < 2.5

## OTHER PURGEABLES

Completed-Date: 02/18/94 Time:12:27 By:JK

&Reporting Units, unless otherwise noted:  
water ug/l; sediment ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-54  
Signature of supervisor indicates that the  
work was performed in accordance with  
federally approved procedures where avail-  
able and in compliance with current quality  
assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED  
DENOTE SAMPLE QUANTITATION LIMITS.

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source andes  
I.D./Site No. 33-633  
County 33 Field No. LCWS-02  
Stream Mile 2 Depth 2"  
Collected: Date 2/7/94, Time 10:50 AM By CJS  
Contact Hazard Unknown  
Signature of sampler Ray Plummer  
Send Report to Wayne Everett,  
CFO

**Sampling Agency**

<input type="checkbox"/> APC	<input type="checkbox"/> DOT
<input type="checkbox"/> DWS	<input type="checkbox"/> GW
<input type="checkbox"/> SWM	<input type="checkbox"/> UST
<input checked="" type="checkbox"/> EEP	<input checked="" type="checkbox"/> PASI
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> WPC
<input type="checkbox"/> other (specify):	

Sample  
 Soil  
 Sediment  
 Water  
  
 Other  
Waste

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient

## ORGANIC ANALYSIS

For lab use only

Laboratory Number 4402030

Date received 2/8/94

Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

	*	Halogenated
32104		bromoform
32101		bromodichloromethane
34413		bromomethane
32102		carbon tetrachloride
34301		chlorobenzene
34311		chloroethane
34576		2-chloroethylvinyl ether
32106		chloroform
34418		chloromethane
32105		dibromochloromethane
34536		1,2-dichlorobenzene
34566		1,3-dichlorobenzene
34571		1,4-dichlorobenzene
34668		dichlorodifluoromethane
34496		1,1-dichloroethane
34531		1,2-dichloroethane
34501		1,1-dichloroethene
		cis-1,2-dichloroethene
34546		trans-1,2-dichloroethene
34541		1,2-dichloropropane
34045		cis-1,3-dichloropropene
34699		trans-1,3-dichloropropene
34723		methylene chloride
34516		1,1,2,2-tetrachloroethane

\* please check desired parameters

Lab Comments: \_\_\_\_\_

### CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

**Note for samplers:** Only one chain of custody form is required per sample set or site (if all collected at the same time).

#### Sample Custody

1. Collected by Craig Stanward Date 2-7-94 time 10:50 AM  
Delivered to Greyhound Date 2-7-94 time 4:00 PM
2. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
3. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
4. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
5. Received in Lab by Lei Carrasco Date 2/8/94 time 10/10  
6. Logged in by Lei Carrasco Date 2/8/94 time 10/10

#### Additional information

7. Nearest town or city Chattanooga
8. Names of others present at time sample collected Art Spaeth, Don VanHoek
9. Approximate volume of sample 40 oz.
10. Number of other samples collected at same time at this point 0
11. Describe field collection procedure and special handling or preservation of this sample  
As per EPA guidelines and kept on ice at 4°C
12. Describe how sample transported to laboratory by bus
13. Sample sealed by Craig Stanward Date sample sealed 2/7/94
14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO,  
Sample Site Code: 33-633  
Sample Type: WASTE  
County: 33  
Field No: LC-WS-02  
Collected-Date 02/07/94 Time 10:50 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0150  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	33
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34506	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1, 2-DICHLOROBENZENE	U < 2.5
34566	1, 3-DICHLOROBENZENE	U < 2.5
34571	1, 4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

**OTHER PURGEABLES**

Completed-Date: 02/16/94 Time:10:04 By:C

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source andes Co.ID/Site No 33-633County 33 Field No LC-W5-03Stream Mile \_\_\_\_\_ Depth 2"Collected Date 2-7-94 Time 10:05 By C35Contact Hazard UnknownSignature of sampler RaymondSend report to Wayne Everett

CFO

Sampling Agency  
 APC    DOT  
 DWS    GW  
 SWM    UST  
 EEP    PASI  
 SF    WPC  
 other (specify): \_\_\_\_\_

Billing Code (required)  
327.38-11

Sample Type  
 Soil  
 Sediment  
 Water  
 Other waste

Field Comments:  
 

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient

Date Priority needed:  
3/14/94

ORGANIC ANALYSIS  
Purgeables and Petroleum Hydrocarbons

For lab use only

Laboratory Number PA20151Date received 2/8/94Time received 10:10 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

Halogenated	
32104	bromoform
32101	bromodichloromethane
34413	bromomethane
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromochloromethane
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	cis-1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	cis-1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

Halogenated	
34475	tetrachloroethene
34506	1,1,1-trichloroethane
34511	1,1,2-trichloroethane
39180	trichloroethene
39488	trichlorofluoromethane
39715	vinyl chloride

Aromatic	
34030	benzene
34301	chlorobenzene
34371	ethylbenzene
34010	toluene
	o-xylene
	m-xylene
	p-xylene

## Other

Petroleum Hydrocarbons	
	Gasoline Range Organics
	Diesel Range Organics
<b>Additives:</b>	
Methyl tert-butyl ether	
diisopropyl ether	

\* please check desired parameters

Lab Comments: \_\_\_\_\_

## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

## Sample Custody

- |    |                    |                     |   |
|----|--------------------|---------------------|---|
| 1. | Collected by       | <u>Ray Stannard</u> | Date <u>2-7-94</u> time <u>11:03 AM</u> |
|    | Delivered to       | <u>Greyhound</u>    | Date <u>2-7-94</u> time <u>4:00 PM</u>  |
| 2. | Received by        |                     | Date _____ time _____                   |
|    | Delivered to       |                     | Date _____ time _____                   |
| 3. | Received by        |                     | Date _____ time _____                   |
|    | Delivered to       |                     | Date _____ time _____                   |
| 4. | Received by        |                     | Date _____ time _____                   |
|    | Delivered to       |                     | Date _____ time _____                   |
| 5. | Received in Lab by | <u>DeCarriere</u>   | Date <u>2/8/94</u> time <u>10:10</u>    |
| 6. | Logged in by       | <u>DeCarriere</u>   | Date <u>2/8/94</u> time <u>10:10</u>    |

## Additional information

- |     |   |   |
|-----|---|---|
| 7.  | Nearest town or city  | <u>Chattanooga</u>  |
| 8.  | Names of others present at time sample collected  | <u>Don VanNoek, Curt Sproth</u>                             |
| 9.  | Approximate volume of sample  | <u>40 oz</u>  |
| 10. | Number of other samples collected at same time at this point                            | <u>0</u>  |
| 11. | Describe field collection procedure and special handling or preservation of this sample | <u>As per EPA guidelines and to kept on ice<br/>at 4°C.</u> |
| 12. | Describe how sample transported to laboratory   | <u>by bus</u>   |
| 13. | Sample sealed by  | <u>Ray Stannard</u>   |
|     |   | Date sample sealed <u>2-7-94</u>                            |
| 14. | Remarks   |   |

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.

Sample Site Code: 33-633

Sample Type: WASTE

County: 33

Field No: LC-WS-03

Collected-Date 02/07/94 Time 11:05 By CJS

Date Priority Needed 03/14/94

Laboratory Number 94-02-0151

Branch Lab Number

Received-Date 02/08/94 Time 10:10 By LJB

Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U <2.5
32101	BROMODICHLOROMETHANE	U <2.5
34413	BROMOMETHANE	U <5.0
32102	CARBON TETRACHLORIDE	U <2.5
34301	CHLOROBENZENE	U <2.5
34311	CHLOROETHANE	U <5.0
34376	2-CHLOROETHYL VINYL ETHER	U <2.5
32106	CHLOROFORM	U <2.5
34418	CHLOROMETHANE	U <5.0
32105	DIBROMOCHLOROMETHANE	U <2.5
34536	1,2-DICHLOROBENZENE	U <2.5
34566	1,3-DICHLOROBENZENE	U <2.5
34571	1,4-DICHLOROBENZENE	U <2.5
34668	DICHLORODIFLUOROMETHANE	U <5.0
34496	1,1-DICHLOROETHANE	U <2.5
34531	1,2-DICHLOROETHANE	U <2.5
34501	1,1-DICHLOROETHENE	U <2.5
	CIS-1,2-DICHLOROETHENE	U <2.5
34546	TRANS-1,2-DICHLOROETHENE	U <2.5
34541	1,2-DICHLOROPROPANE	U <2.5
34045	CIS-1,3-DICHLOROPROPENE	U <2.5
34699	TRANS-1,3-DICHLOROPROPENE	U <2.5
34423	METHYLENE CHLORIDE	3.7
34516	1,1,2,2-TETRACHLOROETHANE	U <2.5
34475	TETRACHLOROETHENE	U <2.5
34506	1,1,1-TRICHLOROETHANE	U <2.5
34511	1,1,2-TRICHLOROETHANE	U <2.5
39180	TRICHLOROETHENE	U <2.5
39488	TRICHLOROFUOROMETHANE	U <5.0
39715	VINYL CHLORIDE	U <5.0

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	U <2.5
34301	CHLOROBENZENE	U <3.5
34536	1,2-DICHLOROBENZENE	U <2.5
34566	1,3-DICHLOROBENZENE	U <2.5
34571	1,4-DICHLOROBENZENE	U <2.5
34371	ETHYL BENZENE	U <2.5
34010	TOLUENE	U <2.5
	O-XYLENE	U <2.5
	M-XYLENE & P-XYLENE	U <2.5

OTHER PURGEABLES

Completed-Date: 02/19/94 Time:17:23 By:JWB

Unit supervisor Jay W. Bixby  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

ANNUAL REPORT OF THE ENVIRONMENTAL LABORATORIES

Sample Source andes Co.

I.D./Site No 33-633

County 33 Field No. C-WS-04

Stream Mile Depth (ft)

Collected Date 7-94 Time 11:25 By CDS

Collected Date \_\_\_\_\_ Time \_\_\_\_\_ By \_\_\_\_\_  
Contact Hazard Unhazard ✓

Signature of sample \_\_\_\_\_

Significance of sampler W E

Send Report to Wayne E. Everett,  
659

CFD 8 ✓

---

**Sampling** \_\_\_\_\_ **Agency** \_\_\_\_\_  
  APC     DOT  
  DWS     GW  
  SWM     USF  
  EEP     X PASI  
X SF     WPC  
other (specify): \_\_\_\_\_

**Billing Code (required)**

327.38-11

Sample      e  
 Soil  
 Sediment  
 Water  
 Other Waste

—  
—

**Sample Priority**

Emergency  
 Legal  
 Routine  
 Ambient

Date Priority need

—  
—

## ORGANIC ANALYSIS

### Purgeables and Petroleum Hydrocarbons

*For lab use only*

Laboratory Number 94020152

Date received 2/3/94

Time received 10/10 by LJB

Date reported by

Reviewed by

	Halogenated
32101	bromoform
32101	bromodichloromethane
34413	<i>bromomethane</i>
32102	carbon tetrachloride
34301	chlorobenzene
34311	chloroethane
34576	2-chloroethylvinyl ether
32106	chloroform
34418	chloromethane
32105	dibromo(chloromethane)
34536	1,2-dichlorobenzene
34566	1,3-dichlorobenzene
34571	1,4-dichlorobenzene
34668	dichlorodifluoromethane
34496	1,1-dichloroethane
34531	1,2-dichloroethane
34501	1,1-dichloroethene
	<i>cis</i> -1,2-dichloroethene
34546	trans-1,2-dichloroethene
34541	1,2-dichloropropane
34045	<i>cis</i> -1,3-dichloropropene
34699	trans-1,3-dichloropropene
34423	methylene chloride
34516	1,1,2,2-tetrachloroethane

\* please check desired parameters

#### Lab Comments:

## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

## Sample Custody

- |    |                              |   |   |
|----|------------------------------|---|---|
| 1. | Collected by<br>Delivered to | <i>Craig Stannard</i><br><i>Greyhound</i> | Date 2-7-94 time 11:25 pm<br>Date 2-7-94 time 4:00 pm |
| 2. | Received by<br>Delivered to  |   | Date _____ time _____<br>Date _____ time _____        |
| 3. | Received by<br>Delivered to  |   | Date _____ time _____<br>Date _____ time _____        |
| 4. | Received by<br>Delivered to  |   | Date _____ time _____<br>Date _____ time _____        |
| 5. | Received in Lab by           | <i>Lia Barocciere</i>                     | Date 2/8/94 time 10:10                                |
| 6. | Logged in by                 | <i>Lia Barocciere</i>                     | Date 2/8/94 time 10:10                                |

## Additional information

- |     |   |  |
|-----|---|--|
| 7.  | Nearest town or city  | <i>Chattanooga</i>                                       |
| 8.  | Names of others present at time sample collected  | <i>Don Van Hook, Curt Spaeth</i>                         |
| 9.  | Approximate volume of sample  | <i>40 oz</i>   |
| 10. | Number of other samples collected at same time at this point                            | <i>0</i>   |
| 11. | Describe field collection procedure and special handling or preservation of this sample | <i>As per EPA guidelines and kept on ice<br/>at 4°C.</i> |
| 12. | Describe how sample transported to laboratory   | <i>by bus</i>  |
| 13. | Sample sealed by  | <i>Craig Stannard</i> Date sample sealed <i>2-7-94</i>   |
| 14. | Remarks   |  |

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, PURGEABLES

Sample Priority:  
Emergency [N] Legal [Y] Routine [N] Ambient [N]

Sample Source: LANDES CO.  
Sample Site Code: 33-633  
Sample Type: WASTE  
County: 33  
Field No: LC-WS-04  
Collected-Date 02/07/94 Time 11:25 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0152  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LCB  
Sampling Agency: HWM/11

CODE	HALOGENATED PURGEABLES	VALUE
32104	BROMOFORM	U < 2.5
32101	BROMODICHLOROMETHANE	U < 2.5
34413	BROMOMETHANE	U < 5.0
32102	CARBON TETRACHLORIDE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34311	CHLOROETHANE	U < 5.0
34576	2-CHLOROETHYL VINYL ETHER	U < 2.5
32106	CHLOROFORM	U < 2.5
34418	CHLOROMETHANE	U < 5.0
32105	DIBROMOCHLOROMETHANE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34668	DICHLORODIFLUOROMETHANE	U < 5.0
34496	1,1-DICHLOROETHANE	U < 2.5
34531	1,2-DICHLOROETHANE	U < 2.5
34501	1,1-DICHLOROETHENE	U < 2.5
	CIS-1,2-DICHLOROETHENE	U < 2.5
34546	TRANS-1,2-DICHLOROETHENE	U < 2.5
34541	1,2-DICHLOROPROPANE	U < 2.5
34045	CIS-1,3-DICHLOROPROPENE	U < 2.5
34699	TRANS-1,3-DICHLOROPROPENE	U < 2.5
34423	METHYLENE CHLORIDE	U < 2.5
34516	1,1,2,2-TETRACHLOROETHANE	U < 2.5
34475	TETRACHLOROETHENE	U < 2.5
34505	1,1,1-TRICHLOROETHANE	U < 2.5
34511	1,1,2-TRICHLOROETHANE	U < 2.5
39180	TRICHLOROETHENE	U < 2.5
39488	TRICHLOROFLUOROMETHANE	U < 5.0
39715	VINYL CHLORIDE	U < 5.0

CODE	AROMATIC PURGEABLES	VALUE
34030	BENZENE	U < 2.5
34301	CHLOROBENZENE	U < 2.5
34536	1,2-DICHLOROBENZENE	U < 2.5
34566	1,3-DICHLOROBENZENE	U < 2.5
34571	1,4-DICHLOROBENZENE	U < 2.5
34371	ETHYL BENZENE	U < 2.5
34010	TOLUENE	U < 2.5
	O-XYLENE	U < 2.5
	M-XYLENE & P-XYLENE	U < 2.5

**OTHER PURGEABLES**

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Completed-Date: 02/19/94 Time:17:57 By:JWB

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg

Unit supervisor Jerry W. Bingham  
Date 3-1-94  
Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.  
Comments: U = UNDETECTED; VALUES SPECIFIED DENOTE SAMPLE QUANTITATION LIMITS.

vol 114 - 6PM

TENNESSEE DEPARTMENT OF HEALTH

TE SLIP

FROM RLH	DATE 3-31-94
TO GAM	3-31-94
RAW	

Please review and route as indicated:

- NBO (box on 6th)
- SWM, Attn: Greg Luke, L&C Tower, 5th Floor
- DOT Sampling (see attached)
- Division of Superfund, L&C Tower, Attn.:  
Underground Storage Tanks, L&C Tower, Attn.:  
Chuck Head
- Division of Radiological Health
- Environmental Field Office; Water Pollution,  
Water Supply, Superfund, Underground Storage  
Tanks, Attn.:  
Brick Church Park Drive, Nashville, TN
- Division of Air Pollution Control, Attn.:  
Robert Brawner, Gary Leggett, Charles  
Northington
- Division of Water Pollution Control
- Division of Water Supply, Attn: Robert Foster,  
Tom Moss
- Division of Ground Water Protection
- Chattanooga Field Office; Water Pollution,  
Water Supply, Superfund, Underground Storage  
Tanks, Attn: Wayne Kherett  
540 McCallie, Chattanooga, TN 37402
- Jackson Branch Lab, Attn: RLM
- Knoxville Branch Lab, Attn: EAM
- Aquatic Biology, Basement
- CEM, LQA, 5th floor
- Memphis Basin/Field Office
- Knoxville Basin/Field Office
- Jackson Basin/Field Office
- Johnson City Basin/Field Office
- Other

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<i>Lander Co.</i>
I.D./Site No.	33-633
County	33
Stream Mile	Field No. LC-SS-01
Collected: Date	Time
Contact Hazard	<i>Unknown</i>
Signature of sampler	<i>Craig Flannery</i>
Send Report to	<i>Wayne Everett, CFO</i>

Sampling Agency	
— APC	DOT
— DWS	GW
— SWM	UST
— EEP	X PASI
X SF	WPC
other (specify):	
Billing Code (required)	327.38- 11
Sample Type	Sediment X Soil Tissue Water Air sludge Other
Sample Priority	Emergency X Legal X Routine Ambient
Date Priority needed:	3/14/94
Field Comments:	

## ORGANIC ANALYSIS

Base/Neutral/Acid Extractables

For lab use only

Laboratory Number 94020146

Date received 2/8/94

Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chloroethoxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (indane)				
34526	benzo(a)anthracene	39350	chlordane				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dieldrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SOIL  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-55-01  
Collected Date 02/07/94 Time 10:00 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 34-02-0146  
Branch Lab Number  
Received Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: RHM/11  
Sample Priority:  
Emergency/[N]legally/Routine/[N]ambient/[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292 BUTYLBENZYL PHthalATE	U<330	34636 4-BROMOPHENYLZENYL ETHER	D<330	39508 PCB 1260	U<440			
39100 BIS(2-ETHYLHEXYL)PHthalATE	D 7730	34641 4-CHLOROPHENYLZENYL ETHER	D<330	61549 PCB 1262	U<470			
39110 DI-N-BUTYL PHthalATE	D<330	34686 HEAChLOROCYCLOPENTADIENE	U<760					
34555 DI-N-oCTYL PHthalATE	U<330	34931 HEAChLOROBUTADIENE	U<330					
34336 DIETHYL PHthalATE	D<330	39700 HEAChLOROBENZENE	U<330	34552 4-CHLORO-3-METHYL PHENOL	U<330			
34341 DIMETHYL PHthalATE	U<330	34935 HEAChLOROETHANE	U<330	34586 2-CHLOROPHENOL	U<330			
34453 N-NITROSDIMETHYLAMINE	U<1200	34551 1,2,4-TRICHLOROBENZENE	U<330	34601 2,4-DICHLOROPHENOL	U<330			
34443 N-NITROSO-DIPHENYLAMINE	U<330	34581 2-CHLORONAPHTHALENE	U<330	34606 2,4-DIMETHYLPHENOL	U<350			
34428 N-NITROSO DI-N-PROPYLAMINE	U<330	39330 ALURIN	U<7.6	34616 2,4-DINITROPHENOL	U<19000			
34403 ISOPHORONE	U<330	39337 ALPHA BHC	U<7.6					
34447 NITROBENZENE	U<330	39338 BETA BHC	U<15.2	34657 2-METHYL-4,6-DINITROPHENOL	U<3800			
26 2,4-DINITROTOLUENE	U<330	34252 DELTA BHC	U<15.2	34691 2-NITROPHENOL	J<330			
26 2,5-DINITROTOLUENE	U<330	39340 GAMMA BHC (INDANE)	U<7.6	34656 4-NITROPHENOL	U<1500			
34205 ACENAPHTHENE	U<330	39350 CHLORDANE	U<90	39332 PENTACHLOROPHENOL	J<1500			
34200 ACENAPHTHYLENE	U<330	38310 4,4 DDD	U<19	34694 PHENOL	U<330			
34220 ANTHRAcene	U<330	39320 4,4 DDE	U<15	34681 2,4,5-TRICHLOROPHENOL	U<330			
34526 BENZO(a)ANTHRAcene	U<330	39300 4,4 DOT	U<11					
34247 BENZO(a)PYRENE	U<330	39380 DICEDRIN	U<7.6					
34230 BENZO(b)FLUORANTHENE	D<330	34361 ENDOSULFAN 1	U<22					
34521 BENZO(g,h,i)PERYLENE	D7760	34355 ENDOSULFAN 11	U<15					
34242 BENZO(k)FLUORANTHENE	D<330	34351 ENDOSULFAN SULFATE	U<11					
34555 DIBENZ(a,h)ANTHRaENE	U<750	39390 ENORIN	J<15					
34376 FLUORANTHENE	D<330	34365 ENDRIN ALDEHYDE	J<1.6					
34381 FLUORENE	U<330	39410 HEPTACHLOR	U<7.6					
34402 INDENO(1,2,3-cd)PYRENE	U<330	39420 HEPTACHLOR EPOXIDE	U<11.4					
34635 NAPHTHALENE	U<330	39460 TOXAPHENE	U<100					
34461 PYEANAPYRENE	U<330	39480 METHYVICHOL	U<53					
34283 BIS(2-CHLOROPROPYL)ETHER	U<330	PCB 1016/1242	U<1200					
34320 CHRySENE	D<330	39488 PCB 1221	U<300					
34273 BIS(2-CHLOROETHYL)ETHER	D<330	39492 PCB 1232	U<500					
34278 BIS(2-CHLOROETHoxy)METHANE	U<330	39500 PCB 1248	U<500					
34283 BIS(2-CHLOROPROPYL)ETHER	U<330	39504 PCB 1254	U<490					

Reporting units, unless otherwise noted:  
• water, ug/l; sediment, ug/kg; fish, mg/kg

Completed-Date: 03/23/94 Time: 5:45C  
Init supervisor *[Signature]*  
Date *3/25/94*

Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in compliance with current quality  
assurance criteria except as qualified,  
Compound(s) Undetected, D-detected. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Landes Co.  
I.D./Site No. 33-633  
County 33 Field No. LC-SS-02  
Stream Mile \_\_\_\_\_ Depth 2"  
Collected: Date 2-8-94, Time 9:00 By pv  
Contact Hazard Unknown  
Signature of sampler Don Van Hook  
Send Report to Wayne Everett,  
CFO

Sampling Agency	Sample Type	Sample Priority
<input type="checkbox"/> APC <input type="checkbox"/> DOT	Sediment	<input type="checkbox"/> Emergency
<input type="checkbox"/> DWS <input type="checkbox"/> GW	<input checked="" type="checkbox"/> Soil	<input checked="" type="checkbox"/> Legal
<input type="checkbox"/> SWM <input type="checkbox"/> UST	<input type="checkbox"/> Tissue	<input checked="" type="checkbox"/> Routine
<input type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI	<input type="checkbox"/> Water	<input type="checkbox"/> Ambient
<input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC	<input type="checkbox"/> Air	
<input type="checkbox"/> other (specify): _____	<input type="checkbox"/> sludge	Date Priority needed: <u>3/14/94</u>
Billing Code (required)	Field Comments: _____	
<u>327.38-11</u>		

ORGANIC ANALYSIS  
Base/Neutral/Acid Extractables

For lab use only  
Laboratory Number 94026171  
Date received 2/8/94  
Time received 1955 by LJB  
Date reported \_\_\_\_\_ by \_\_\_\_\_  
Reviewed by \_\_\_\_\_

	Base/Neutral
34292	butylbenzylphthalate
39100	bis(2-ethylhexyl)phthalate
39110	di-n-butylphthalate
34596	di-n-octylphthalate
34336	diethylphthalate
34341	dimethylphthalate
34438	n-nitrosodimethylamine
34433	n-nitrosodiphenylamine
34428	n-nitroso di-n-propylamine
34408	isophorone
34447	nitrobenzene
34611	2,4-dinitrotoluene
34626	2,6-dinitrotoluene
34205	acenaphthene
34200	acenaphthylene
34220	anthracene
34526	benzo(a)anthracene
34247	benzo(a)pyrene
34230	benzo(b)fluoranthene
34521	benzo(ghi)perylene
34242	benzo(k)fluoranthene
34320	chrysene
34556	dibenz(a,h)anthracene
34376	fluoranthene
34381	fluorene
34403	indeno(1,2,3-cd)pyrene
34696	naphthalene
34461	phenanthrene
34469	pyrene

	Base/Neutral
34273	bis(2-chloroethyl) ether
34278	bis(2-chlorooxy)methane
34283	bis(2-chloroisopropyl) ether
34636	4-bromophenylphenyl ether
34641	4-chlorophenylphenyl ether
34386	hexachlorocyclopentadiene
34391	hexachlorobutadiene
39700	hexachlorobenzene
34396	hexachloroethane
34551	1,2,4-trichlorobenzene
34581	2-chloronaphthalene
39330	aldrin
39337	a-BHC
39338	b-BHC
34259	d-BHC
39340	g-BHC (lindane)
39350	chlordan
38310	4,4'-DDD
39320	4,4'-DDE
39300	4,4'-DDT
39380	dicofol
34361	endosulfan I
34356	endosulfan II
34351	endosulfan sulfate
39390	endrin
34366	endrin aldehyde
39410	heptachlor
39420	heptachlor epoxide
39400	toxaphene

\* please check desired parameter

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SOIL  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SS-02  
Collected-Date 02/08/94 Time 09:00 By DV  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0171  
Branch Lab Number  
Received-Date 02/08/94 Time 14:55 By LJB  
Sampling Agency: HWM/II  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	UK8900	34636	4-BROMOPHENYLPHENYL ETHER	UK2200	39508	PCB 1260	UK550
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D102000	34641	4-CHLOROPHENYLPHENYL ETHER	UK1800	81649	PCB 1262	UK550
39110	DI-N-BUTYL PHTHALATE	UK1800	34386	HEXACHLOROCYCLOPENTADIENE	UK2200			
34596	DI-N-OCTYL PHTHALATE	UK27000	34391	HEXACHLOROBUTADIENE	UK890			
34336	DIETHYL PHTHALATE	UK890	39700	HEXACHLOROBENZENE	UK890			
34341	DIMETHYL PHTHALATE	UK890	34396	HEXACHLOROETHANE	UK890			
34438	N-NITROSODIMETHYLAMINE	UK1800	34551	1,2,4-TRICHLOROBENZENE	UK890			
34433	N-NITROSODIPHENYLAMINE	UK1800	34581	2-CHLORONAPHTHALENE	UK890			
34428	N-NITROSO DI-N-PROPYLAMINE	UK890	39330	ALDRIN	UK9.4			
34408	ISOPHORONE	UK890	39337	ALPHA BHC	UK9.4			
34447	NITROBENZENE	UK890	39338	BETA BHC	UK19			
34611	2,4-DINITROTOLUENE	UK2200	34259	DELTA BHC	UK12			
.5	2,6-DINITROTOLUENE	UK2200	39340	GAMMA BHC(LINDANE)	UK10			
34205	ACENAPHTHENE	UK890	39350	CHLORDANE	UK220			
34200	ACENAPHTHYLENE	UK890	38310	4,4 DDD	UK24			
34220	ANTHRACENE	UK2200	39320	4,4 DDE	UK17			
34526	BENZO(a)ANTHRACENE	UK1800	39300	4,4 DDT	UK12			
34247	BENZO(a)PYRENE	D2200	39380	DIELDRIN	D8.7			
34230	BENZO(b)FLUORANTHENE	UK3600	34361	ENDOSULFAN I	UK29			
34521	BENZO(ghi)PERYLENE	UK1800	34356	ENDOSULFAN II	UK18			
34242	BENZO(k)FLUORANTHENE	UK1800	34351	ENDOSULFAN SULFATE	UK13			
34556	DI(BENZO(a,h))ANTHRACENE	UK3600	39390	ENDRIN	UK19			
34376	FLUORANTHENE	UK4500	34366	ENDRIN ALDEHYDE	UK9.4			
34381	FLUORENE	UK890	39410	HEPTACHLOR	UK9.4			
34403	INDENO(1,2,3-cd)PYRENE	D 1810	39420	HEPTACHLOR EPOXIDE	UK12			
34696	NAPHTHALENE	D890	39400	TOXAPHENE	UK650			
34461	PHENANTHRENE	UK2200	39480	METHOXYCHLOR	UK66			
34469	PYRENE	D 5500		PCB 1016/1242	UK690			
34320	CHRYSENE	UK4500	39488	PCB 1221	UK760			
34273	BIS(2-CHLOROETHYL)ETHER	UK890	39492	PCB 1232	UK860			
34278	BIS(2-CHLOROETHOXY)METHANE	UK890	39500	PCB 1248	UK580			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK890	39504	PCB 1254	UK550			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg;fish,mg/kg

Unit supervisor *[Signature]*  
Date *2-24-94*

Completed-Date:03/22/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

**STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES**

Sample Source <u>Lander Co.</u>	Sampling Agency <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____	Sample Type <input checked="" type="checkbox"/> Sediment <input checked="" type="checkbox"/> Soil <input type="checkbox"/> Tissue <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> sludge <input type="checkbox"/> Other _____	Sample Priority <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient
I.D./Site No. <u>33-633</u>	Field No. <u>LC-SS-03</u>	Date Priority needed: <u>3/14/94</u>	
County <u>33</u>	Stream Mile _____	Depth <u>2"</u>	
Collected: Date <u>2-8-94</u> Time <u>9:10 AM</u> By <u>CJS</u>			
Contact Hazard <u>Unknown</u>			
Signature of sampler <u>Wayne Everett</u>			
Send Report to <u>CFO</u>	Billing Code (required) <u>327.38-11</u>		
Field Comments: _____			

**ORGANIC ANALYSIS**  
**Base/Neutral/Acid Extractables**

For lab use only

Laboratory Number 94020172

Date received 2/8/94

Time received 1455 by LBB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chloroethoxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	c-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDF				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dicofol				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

### Lab Comments:

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SOIL  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SS-03  
Collected-Date 02/08/94 Time 09:10 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0172  
Branch Lab Number  
Received-Date 02/08/94 Time 14:55 By LJ8  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	UK<400	34636	4-BROMOPHENYLPHENYL ETHER	UK<330	39508	PCB 1260	UK1500
33100	BIS(2-ETHYLHEXYL)PHTHALATE	D 4050	34641	4-CHLOROPHENYLPHENYL ETHER	UK<330	31649	PCB 1262	UK1500
33110	DI-N-BUTYL PHTHALATE	UK<480	34386	HEXACHLOROCYCLOPENTADIENE	UK<600			
34596	DI-N-OCTYL PHTHALATE	UK<3000	34391	HEXACHLOROBUTADIENE	UK<330			
34336	DIETHYL PHTHALATE	D<480	39700	HEXACHLOROBENZENE	UK<330			
34341	DIMETHYL PHTHALATE	UK<330	34396	HEXACHLOROETHANE	UK<330			
34438	N-NITROSO DIMETHYLAMINE	UK<970	34551	1,2,4-TRICHLOROBENZENE	UK<330			
34433	N-NITROSO DIPHENYLAMINE	UK<330	34581	2-CHLORONAPHTHALENE	UK<330			
34428	N-NITROSO DI-N-PROPYLAMINE	UK<330	39330	ALDRIN	UK<25			
34408	ISOPHORONE	UK<330	39337	ALPHA BHC	UK<25			
34447	NITROBENZENE	UK<330	39338	BETA BHC	UK<50			
34511	2,4-DINITROTOLUENE	UK<600	34259	DELTA BHC	UK<32			
	6 2,6-DINITROTOLUENE	UK<330	39340	GAMMA BHC(LINDANE)	UK<32			
34205	ACENAPHTHENE	UK<330	39350	CHLORDANE	UK<600			
34200	ACENAPHTHYLENE	UK<330	38310	4,4 DDD	UK<64			
34220	ANTHRACENE	UK<330	39320	4,4 DDE	UK<47			
34526	BENZO(a)ANTHRACENE	UK<1200	39300	4,4 DDT	UK<32			
34247	BENZO(a)PYRENE	D<480	39380	DIELDRIN	D<23			
34230	BENZO(b)FLUORANTHENE	UK<480	34361	ENDOSULFAN I	UK<77			
34521	BENZO(ghi)PERYLENE	D 585	34356	ENDOSULFAN II	UK<99			
34242	BENZO(k)FLUORANTHENE	UK<480	34351	ENDOSULFAN SULFATE	UK<35			
34556	DI(BENZO(a,h))ANTHRACENE	D 1230	39390	ENDRIN	UK<52			
34376	FLUORANTHENE	UK<480	34366	ENDRIN ALDEHYDE	UK<25			
34381	FLUORENE	UK<330	39410	HEPTACHLOR	UK<28			
34403	INDENO(1,2,3-cd)PYRENE	D 728	39420	HEPTACHLOR EPOXIDE	UK<32			
34698	NAPHTHALENE	D<330	39400	TOXAPHENE	UK<1700			
34461	PHENANTHRENE	UK<330	39480	METHOXYPHENOL	UK<180			
34469	PYRENE	UK<480		PCB 1016/1242	UK<1900			
34320	CHRYSENE	UK<1200	39488	PCB 1221	UK<4100			
34273	BIS(2-CHLOROETHYL)ETHER	UK<330	39492	PCB 1232	UK<2300			
34278	BIS(2-CHLOROETHOXY)METHANE	UK<330	39500	PCB 1248	UK<1600			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK<330	39504	PCB 1254	UK<1500			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg; fish, mg/kg

Unit supervisor Richie Niles  
Date 3/20/94

Completed-Date:03/22/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments::U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<u>Lander Co.</u>
I.D./Site No	<u>33-633</u>
County	<u>33</u>
Stream Mile	Field No. <u>LC-55-04</u>
Collected: Date	Depth <u>2"</u>
Contact Hazard	Time <u>9:20 AM</u> by <u>CS</u>
Signature of sampler	<u>David T. Taylor</u>
Send Report to	<u>Wayne Everett</u> <u>CFO</u>

Sampling Agency	Agency
— APC	<input type="checkbox"/> DOT
— DWS	<input type="checkbox"/> GW
— SWM	<input type="checkbox"/> UST
— EEP	<input checked="" type="checkbox"/> PASI
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> WPC
— other (specify): _____	
Sample Type	Sediment
<input checked="" type="checkbox"/> Soil	<input type="checkbox"/> Tissue
<input type="checkbox"/> Water	<input type="checkbox"/> Air
<input type="checkbox"/> Sludge	<input type="checkbox"/> Other
Sample Priority	Emergency
<input checked="" type="checkbox"/> Legal	<input checked="" type="checkbox"/> Routine
<input type="checkbox"/> Ambient	
Date Priority needed:	<u>3/14/94</u>
Billing Code (required)	<u>327.38-11</u>
Field Comments:	_____

ORGANIC ANALYSIS  
Base/Neutral/Acid Extractables

For lab use only  
Laboratory Number 04620173  
Date received 2/8/94  
Time received 1455 by LJB  
Date reported \_\_\_\_\_ by \_\_\_\_\_  
Reviewed by \_\_\_\_\_

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chloroethoxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34603	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	e-BHC (indane)				
34526	benzo(a)anthracene	39350	chlordane				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(gi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	ieldrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

### CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

#### Sample Custody

1. Collected by Chris H. Spangler Date 2/8/99 time 9:20 AM  
Delivered to Greg Bernick Date 2/8/99 time 10:00 AM
2. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
3. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
4. Received by \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_  
Delivered to \_\_\_\_\_ Date \_\_\_\_\_ time \_\_\_\_\_
5. Received in Lab by Reo Barrocerio Date 2/8/99 time 1955  
6. Logged in by Reo Barrocerio Date 2/8/99 time 1955

#### Additional information

7. Nearest town or city \_\_\_\_\_
8. Names of others present at time sample collected \_\_\_\_\_
9. Approximate volume of sample \_\_\_\_\_
10. Number of other samples collected at same time at this point \_\_\_\_\_
11. Describe field collection procedure and special handling or preservation of this sample  
\_\_\_\_\_  
\_\_\_\_\_
12. Describe how sample transported to laboratory \_\_\_\_\_
13. Sample sealed by \_\_\_\_\_ Date sample sealed \_\_\_\_\_
14. Remarks \_\_\_\_\_

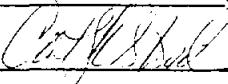
STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SOIL  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SS-04  
Collected-Date 02/08/94 Time 09:20 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0173  
Branch Lab Number  
Received-Date 02/08/94 Time 14:55 By LJ8  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34232	BUTYLBENZYL PHTHALATE	U<6.6*	34636	4-BROMOPHENYLPHENYL ETHER	U<2.6	39508	PCB 1260	U<3.1
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 29.2	34641	4-CHLORDPHENYLPHENYL ETHER	U<2.6	81649	PCB 1262	U<3.1
39110	DI-N-BUTYL PHTHALATE	U<2.6	34386	HEXACHLOROCYCLOPENTADIENE	U<6.6			
34536	DI-N-OCTYL PHTHALATE	U<13	34391	HEXACHLOROBUTADIENE	U<2.6			
34336	DIETHYL PHTHALATE	D<2.6	39700	HEXACHLOROBENZENE	U<2.6			
34341	DIMETHYL PHTHALATE	U<2.6	34396	HEXACHLOROETHANE	U<2.6			
34438	N-NITROSDIMETHYLAMINE	U<2.1	34551	1,2,4-TRICHLOROBENZENE	U<2.6			
34433	N-NITROSDIPHENYLAMINE	U<2.6	34581	2-CHLORONAPHTHALENE	U<2.6			
34428	N-NITROSO DI-N-PROPYLAMINE	U<2.6	39330	ALDRIN	U<0.055			
34403	ISOPHORONE	U<2.6	39337	ALPHA BHC	U<0.055			
34447	NITROBENZENE	U<2.6	39338	BETA BHC	U<0.11			
34611	2,4-DINITROTOLUENE	U<2.6	34259	DELTA BHC	U<0.072			
34626	2,6-DINITROTOLUENE	U<2.6	39340	GAMMA BHC(LINDANE)	U<0.059			
34205	ACENAPHTHENE	U<2.6	39350	CHLORDANE	U<1.3			
34200	ACENAPHTHYLENE	D<2.6	39310	4,4 DDD	U<0.14			
34220	ANTHRACENE	D<2.6	39320	4,4 DDE	U<0.10			
34526	BENZO(a)ANTHRACENE	D 22.0	39300	4,4 DDT	U<0.069			
34247	BENZO(a)PYRENE	D 13.8	39380	DIEDRIN	U<0.051			
34230	BENZO(b)FLUORANTHENE	D#36.9	34361	ENDOSULFAN I	U<0.17			
34521	BENZO(g,h,i)PERYLENE	D 11.7	34356	ENDOSULFAN II	U<0.11			
34242	PENZO(k)FLUORANTHENE	D#	34351	ENDOSULFAN SULFATE	U<0.077			
34555	DIBENZO(a,n)ANTHRACENE	D 8.75	39390	ENDRIN	U<0.11			
34376	FLUORANTHENE	D 26.7	34366	ENDRIN ALDEHYDE	U<0.055			
34381	FLUORENE	D<2.6	39410	HEPTACHLOR	U<0.055			
34403	INDENO(1,2,3-cd)PYRENE	D 19.2	39420	HEPTACHLOR EPOXIDE	U<0.071			
34636	NAPHTHALENE	D<2.6	39400	TOXAPHENE	U<3.3			
34461	PHENANTHRENE	D 5.17	39480	METHOXYCHLOR	U<0.39			
34469	PYRENE	D 24.3	PCB 1016/1242		U<4.1			
34320	CHRYSENE	D 29.4	39488	PCB 1221	U<4.5			
34273	BIS(2-CHLOROETHYL)ETHER	U<2.6	39492	PCB 1232	U<5.1			
34278	BIS(2-CHLOROETHOXY)METHANE	U<2.6	39500	PCB 1248	U<3.4			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<2.6	39504	PCB 1254	U<3.2			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg; fish, ng/kg

Unit supervisor   
Date 3-29-94

Completed-Date:03/22/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U-UNDETECTED, D-DETECTED, THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

\*ALL RESULTS IN MG/KG (PPM). #BOTH PRESENT-MEASURED AS BENZO(b)FLUORANTHENE.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<i>Landes Co.</i>
I.D./Site No.	<i>33-633</i>
County	<i>33</i>
Field No.	<i>LC-55-05</i>
Stream Mile	<i>Depth 1"</i>
Collected Date	<i>2/7/94</i>
Time	<i>1:10 PM</i>
By	<i>CJS</i>
Contact Hazard	<i>Unknown</i>
Signature of sampler	<i>Gary Hammarby</i>
Send Report to	<i>Wayne Everett</i>

Sampling Agency	
APC	<input type="checkbox"/> DOT
DWS	<input type="checkbox"/> GW
SWM	<input type="checkbox"/> UST
EEP	<input checked="" type="checkbox"/> PASI
SF	<input type="checkbox"/> WPC
other (specify):	
Billing Code (required)	<i>327.38-11</i>
Sample Type	
Sediment	<input type="checkbox"/>
Soil	<input checked="" type="checkbox"/>
Tissue	<input type="checkbox"/>
Water	<input type="checkbox"/>
Air	<input type="checkbox"/>
sludge	<input type="checkbox"/>
Other	<input type="checkbox"/>
Sample Priority	
Emergency	<input type="checkbox"/>
Legal	<input checked="" type="checkbox"/>
Routine	<input checked="" type="checkbox"/>
Ambient	<input type="checkbox"/>
Date Priority needed:	<i>3/14/94</i>
Field Comments:	

**ORGANIC ANAL**  
Base/Neutral/Acid Extractables

For lab use only  
Laboratory Number *99020147*  
Date received *2/8/94*  
Time received *1010* by *LJB*  
Date reported \_\_\_\_\_ by \_\_\_\_\_  
Reviewed by \_\_\_\_\_

Base/Neutral		Base/Neutral		Base/Neutral		Acid Extractable	
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	346(X)	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	pnenol
34447	<input checked="" type="checkbox"/> nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	<input checked="" type="checkbox"/> benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dieleldrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	<input checked="" type="checkbox"/> pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_



## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<u>Lander Co.</u>
I.D./Site No.	<u>33-633</u>
County	<u>33</u>
Field No.	<u>LC-SS-06</u>
Stream Mile	<u>1"</u>
Collected: Date	<u>2/7/94</u>
Time	<u>1:20 PM</u>
By	<u>CJS</u>
Contact Hazard	<u>Unknown</u>
Signature of sampler	<u>Ron Starnes</u>
Send Report to	<u>Wayne Everett</u>
CFO	

Sampling Agency  
 APC     DOT  
 DWS     GW  
 SWM     UST  
 EEP     PASI  
 SF     WPC  
 other (specify): \_\_\_\_\_

Billing Code (required)  
327.38-11

Sample Type  
 Sediment  
 Soil  
 Tissue  
 Water  
 Air  
 sludge  
 Other \_\_\_\_\_

Sample Priority  
 Emergency  
 Legal  
 Routine  
 Ambient  
  
Date Priority needed:  
3/14/94

Field Comments: \_\_\_\_\_

ORGANIC ANAL'  
Base/Neutral/Acid Extractables

For lab use only

Laboratory Number 91026148

Date received 2/8/94

Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chloroethoxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	e-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dicldrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SOIL  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-99-06  
Collected-Date 02/07/94 Time 13:20 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0148  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/II  
Sample Priority:  
Emergency[N] Legal[Y] Routine[N] Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	UK4600	34636	4-BROMOPHENYLPHENYL ETHER	UK1800	39508	PCB 1260	UK1200
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 6170	34641	4-CHLOROPHENYLPHENYL ETHER	UK1800	81649	PCB 1262	UK1200
39110	DI-N-BUTYL PHTHALATE	UK1800	34386	HEXACHLOROCYCLOPENTADIENE	UK4600			
34596	DI-N-OCTYL PHTHALATE	UK4600	34391	HEXACHLOROBUTADIENE	UK1800			
3-336	DIETHYL PHTHALATE	UK1800	39700	HEXACHLOROBENZENE	DK330			
34341	DIMETHYL PHTHALATE	UK1800	34396	HEXACHLOROETHANE	UK1800			
34438	N-NITROSODIMETHYLAMINE	UK1500	34551	1,2,4-TRICHLOROBENZENE	UK1800			
34433	N-NITROSODIPHENYLAMINE	UK1800	34581	2-CHLORONAPHTHALENE	UK1800			
34428	N-NITROSO DI-N-PROPYLAMINE	UK1800	39330	ALDRIN	UK37			
34408	ISOPHORONE	UK1800	39337	ALPHA BHC	D 209			
34447	NITROBENZENE	UK1800	39338	BETA BHC	D 340			
3-611	2,4-DINITROTOLUENE	UK1800	34259	DELTA BHC	DK36.8			
25	2,6-DINITROTOLUENE	UK1800	39340	GAMMA BHC(LINDANE)	D 53			
34205	ACENAPHTHENE	DK1800	39350	CHLORDANE	UK460			
34200	ACENAPHTHYLENE	D 6050	38310	4,4 DDD	UK92			
34220	ANTHRACENE	D 6320	39320	4,4 DDE	UK37			
34526	BENZO(a)ANTHRACENE	D 15200	39300	4,4 DDT	UK28			
34247	BENZO(a)PYRENE	D 15900	39380	DIELDRIN	UK37			
34230	BENZO(b)FLUORANTHENE	D#10600	34361	ENDOSULFAN I	UK55			
34521	BENZO(g,h)PERYLENE	D 13400	34356	ENDOSULFAN II	UK74			
34242	BENZO(k)FLUORANTHENE	D#	34351	ENDOSULFAN SULFATE	UK28			
34556	DI(BENZO(a,h))ANTHRACENE	D 5000	39390	ENDRIN	UK74			
34276	FLUORANTHENE	D 30000	34366	ENDRIN ALDEHYDE	UK37			
34381	FLORENE	DK1800	39410	HEPTACHLOR	UK13			
34403	INDENO(1,2,3-cd)PYRENE	D 16200	39420	HEPTACHLOR EPOXIDE	UK50			
34696	NAPHTHALENE	DK1800	39400	TOXAPHENE	UK2700			
34461	PHENANTHRENE	D 8300	39480	METHOXYCHLOR	UK140			
34469	PYRENE	D 30100		PCB 1016/1242	UK2900			
34320	CHRYSENE	D 19300	39488	PCB 1221	UK140			
34273	BIS(2-CHLOROETHYL)ETHER	UK1800	39492	PCB 1232	UK2900			
34278	BIS(2-CHLOROETHOXY)METHANE	UK1800	39500	PCB 1248	UK3100			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK1800	39504	PCB 1254	UK3600			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg;fish,ag/kg

Unit supervisor  
Date 3-25-94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.  
= BOTH PRESENT-MEASURED AS BENZO(b)FLUORANTHENE.

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source Lander Co.  
I.D./Site No. 33-633  
County 33 Field No. LC-SD-01  
Stream Mile \_\_\_\_\_ Depth 2"  
Collected: Date 2-1-94 Time 8:30 By CDS  
Contact Hazard Unknown  
Signature of sampler Gary Steward  
Send Report to Wayne Everett,  
CFO

<p><b>Sampling Agency</b></p> <p><input type="checkbox"/> APC    <input type="checkbox"/> DOT  <input type="checkbox"/> DWS    <input type="checkbox"/> GW  <input type="checkbox"/> SWM    <input type="checkbox"/> UST  <input type="checkbox"/> EEP    <input checked="" type="checkbox"/> PASI  <input checked="" type="checkbox"/> SF    <input type="checkbox"/> WPC  <input type="checkbox"/> other (specify):  <hr/></p>	<p><b>Sample Type</b></p> <p><input checked="" type="checkbox"/> Sediment  <input type="checkbox"/> Soil  <input type="checkbox"/> Tissue  <input type="checkbox"/> Water  <input type="checkbox"/> Air  <input type="checkbox"/> sludge  <input type="checkbox"/> Other</p>	<p><b>Sample Priority</b></p> <p><input type="checkbox"/> Emergency  <input checked="" type="checkbox"/> Legal  <input checked="" type="checkbox"/> Routine  <input type="checkbox"/> Ambient</p> <p>Date Priority needed:  <hr/></p>
<p><b>Billing Code (required)</b></p> <p><u>327.38-11</u></p>		<p><b>Field Comments:</b> _____</p>

**ORGANIC ANALYSIS**  
Base/Neutral/Acid Extractables

For lab use only  
Laboratory Number 94020141  
Date received 2/8/94  
Time received 1010 by LJB  
Date reported \_\_\_\_\_ by \_\_\_\_\_  
Reviewed by \_\_\_\_\_

	Base/Neutral		Base/Neutral		Base/Neutral		Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dicofol				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

### Lab Comments:

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SEDIMENT  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SD-01  
Collected-Date 02/07/94 Time 08:30 By CJS  
Date Priority Needed 03/11/94

Laboratory Number 94-02-0141  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N] Legal[Y] Routine[N] Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	U<390	34636	4-BROMOPHENYLPHENYL ETHER	U<390	39508	PCB 1260	U<550
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 1100	34641	4-CHLOROPHENYLPHENYL ETHER	U<390	81649	PCB 1262	U<600
39110	DI-N-BUTYL PHTHALATE	U<390	34386	HEXAChLOROCYCLOPENTADIENE	U<1000			
34596	DI-N-OCTYL PHTHALATE	U<390	34391	HEXAChLOROBUTADIENE	U<390			
34336	DIETHYL PHTHALATE	D<390	39700	HEXAChLOROBENZENE	D 58.7			
34341	DIMETHYL PHTHALATE	U<390	34396	HEXAChLOROETHANE	D<390			
34438	N-NITROSDODIMETHYLAMINE	U<1600	34551	1,2,4-TRICHLOROBENZENE	U<390			
34433	N-NITROSDODIPHENYLAMINE	U<390	34581	2-CHLORONAPHTHALENE	U<390			
34428	N-NITROSO DI-N-PROPYLAMINE	U<390	39330	ALDRIN	U<9.6			
34408	ISOPHORONE	U<390	39337	ALPHA BHC	U<9.6			
34447	NITROBENZENE	U<390	39338	BETA BHC	U<19			
34811	2,4-DINITROTOLUENE	U<390	34259	DELTA BHC	U<19			
34816	2,6-DINITROTOLUENE	U<390	39340	GAMMA BHC(LINDANE)	U<9.5			
34205	ACENAPHTHENE	U<390	39350	CHLORDANE	U<240			
34200	ACENAPHTHYLENE	U<390	38310	4,4 DDD	U<24			
34220	ANTHRACENE	U<390	39320	4,4 DDE	U<19			
34526	BENZO(a)ANTHRACENE	U<390	39300	4,4 DDT	U<14			
34247	BENZO(a)PYRENE	U<390	39380	DIELDRIN	U<9.6			
34230	BENZO(b)FLUORANTHENE	U<390	34361	ENDOSULFAN I	U<29			
34521	BENZO(ghi)PERYLENE	U<390	34356	ENDOSULFAN II	U<19			
34242	BENZO(k)FLUORANTHENE	U<390	34351	ENDOSULFAN SULFATE	U<14			
34556	DiBENZO(a,b)ANTHRACENE	U<1000	39390	ENDRIN	U<19			
34376	FLUORANTHENE	D<390	34366	ENDRIN ALDEHYDE	U<9.5			
34381	FLUORENE	U<390	39410	HEPTACHLOR	U<9.6			
34403	INDENO(1,2,3-cd)PYRENE	U<390	39420	HEPTACHLOR EPOXIDE	U<14			
34636	NAPHTHALENE	D<390	39400	TOXAPHENE	U<1400			
34461	PHENANTHRENE	D<390	39480	METHOXYCHLOR	U<72			
34469	PYRENE	D<390		PCB 1016/1242	U<1500			
34320	CHRYSENE	U<390	39488	PCB 1221	U<1600			
34273	BIS(2-CHLOROETHYL)ETHER	U<390	39492	PCB 1232	U<1900			
34278	BIS(2-CHLOROETHOXY)METHANE	U<390	39500	PCB 1248	U<630			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<390	39504	PCB 1254	U<620			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg;fish,mg/kg

Unit supervisor  
Data 3-25-94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in compliance with current quality  
assurance criteria except as qualified.

Comments::U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	Lander Co.
I.D./Site No.	33-633
County	33
Field No.	LC-SD-02
Stream Mile	
Depth	4"
Collected Date	2/1/94
Time	8:55
By	CJS
Contact Hazard	Unknown
Signature of sampler	Chris Hamner
Send Report to	Wayne Everett, CFO

Sampling Agency	Agency
<input type="checkbox"/> APC	<input type="checkbox"/> DOT
<input type="checkbox"/> DWS	<input type="checkbox"/> GW
<input type="checkbox"/> SWM	<input type="checkbox"/> UST
<input type="checkbox"/> EEP	<input checked="" type="checkbox"/> PASI
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> WPC
<input type="checkbox"/> other (specify): _____	
Sample Type	Type
<input checked="" type="checkbox"/> Sediment	<input type="checkbox"/> Soil
<input type="checkbox"/> Tissue	<input type="checkbox"/> Water
<input type="checkbox"/> Air	<input type="checkbox"/> sludge
<input type="checkbox"/> Other _____	
Sample Priority	Priority
<input type="checkbox"/> Emergency	<input checked="" type="checkbox"/> Legal
<input type="checkbox"/> Routine	<input type="checkbox"/> Ambient
Date Priority needed:	3/14/94
Billing Code (required)	327.38-11
Field Comments:	.

ORGANIC ANALYSIS  
Base/Neutral/Acid Extractables

For lab use only  
Laboratory Number 94020142  
Date received 2/8/94  
Time received 1010 by LJB  
Date reported \_\_\_\_\_ by \_\_\_\_\_  
Reviewed by \_\_\_\_\_

Base/Neutral		Base/Neutral		Base/Neutral		Acid Extractable	
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-chethylhexyl)phthalate	34278	bis(2-chlorocetoxyl)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-niurophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-niurophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin	Herbicides		Other	
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	e-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordane				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dieldrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

## CHAIN OF CUSTODY AND SUPPLEMENTAL INFORMATION

Note for samplers: Only one chain of custody form is required per sample set or site (if all collected at the same time).

## Sample Custody

1. Collected by \_\_\_\_\_  
Delivered to \_\_\_\_\_

*Greg Starnard*  
*Greyhound*

Date 2-7-94 time 8:55AM  
Date 2-7-94 time 4:00 PM

2. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

3. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

4. Received by \_\_\_\_\_  
Delivered to \_\_\_\_\_

Date \_\_\_\_\_ time \_\_\_\_\_  
Date \_\_\_\_\_ time \_\_\_\_\_

5. Received in Lab by \_\_\_\_\_  
6. Logged in by \_\_\_\_\_

*Les Barrocaire*  
*Les Barrocaire*

Date 2/8/94 time 10/10  
Date 2/8/94 time 10/10

## Additional information

7. Nearest town or city \_\_\_\_\_

*Chattanooga*

8. Names of others present at time sample collected Don Vanlook, Curt Spaelth

9. Approximate volume of sample 40 oz.

10. Number of other samples collected at same time at this point 0

11. Describe field collection procedure and special handling or preservation of this sample

*As per EPA guidelines and kept at  
4°C.*

12. Describe how sample transported to laboratory by bus

13. Sample sealed by Greg Starnard Date sample sealed 2-7-94

14. Remarks \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SEDIMENT  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SD-02  
Collected-Date 02/07/94 Time 08:55 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0142  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJS  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N] Legal[Y] Routine[N] Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	UK400	34636	4-BROMOPHENYLPHENYL ETHER	UK400	39508	PCB 1260	UK580
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D<400	34641	4-CHLOROPHENYLPHENYL ETHER	UK400	81649	PCB 1262	UK620
39110	DI-N-BUTYL PHTHALATE	UK400	34386	HEXACHLOROCYCLOPENTADIENE	UK1000			
34596	DI-N-OCTYL PHTHALATE	UK400	34391	HEXACHLOROBUTADIENE	UK400			
34336	DIETHYL PHTHALATE	D<400	39700	HEXACHLOROBENZENE	UK330			
34341	DIMETHYL PHTHALATE	UK400	34396	HEXACHLOROETHANE	UK400			
34438	N-NITROSDIMETHYLAMINE	UK1600	34551	1,2,4-TRICHLOROBENZENE	UK400			
34433	N-NITROSDIPHENYLAMINE	UK400	34581	2-CHLORONAPHTHALENE	UK400			
34428	N-NITROSO DI-N-PROPYLAMINE	UK400	39330	ALDRIN	UK10			
34402	ISOPHORONE	UK400	39337	ALPHA BHC	UK10			
34447	NITROBENZENE	UK400	39338	BETA BHC	UK20			
34611	2,4-DINITROTOLUENE	UK400	34259	DELTA BHC	UK20			
326	2,5-DINITROTOLUENE	UK400	39340	GAMMA BHC(LINDANE)	UK10			
34205	ACENAPHTHENE	D<400	39350	CHLORDANE	UK252			
34200	ACENAPHTHYLENE	D<400	38310	4,4 DDD	UK25			
34220	ANTHRACENE	D<400	39320	4,4 DDE	UK20			
34526	BENZO(a)ANTHRACENE	D<400	39330	4,4 DDT	UK15			
34247	BENZO(a)PYRENE	D<400	39380	HELDRIN	UK10			
34230	BENZO(b)FLUORANTHENE	D<400	34361	ENDOSULFAN I	UK30			
34521	BENZO(ghi)PERYLENE	D<400	34355	ENDOSULFAN II	UK20			
34242	BENZO(k)FLUORANTHENE	D<400	34351	ENDOSULFAN SULFATE	UK15			
34556	IBENZO(a,h)ANTHRACENE	UK1000	39390	ENDRIN	UK20			
34376	FLUORANTHENE	D 598	34365	ENDRIN ALDEHYDE	UK10			
34381	FLUORENE	D<400	33410	HEPTACHLOR	UK10			
34403	INDENO(1,2,3-cd)PYRENE	UK400	33420	HEPTACHLOR EPOXIDE	UK15			
34696	NAPHTHALENE	D<400	39400	TOXAPHENE	UK1500			
34461	PHENANTHRENE	D<400	39480	METHOXYCHLOR	UK76			
34469	PYRENE	D 602		PCB 1016/1242	UK1600			
34320	CHRYSENE	D<400	39488	PCB 1221	UK1700			
34273	BIS(2-CHLOROETHYL)ETHER	UK400	39492	PCB 1232	UK2000			
34278	BIS(2-CHLOROETHOXY)METHANE	UK400	39500	PCB 1248	UK560			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK400	39504	PCB 1254	UK650			

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg;fish,ag/kg

Unit supervisor Cathy L. Stael  
Date 3-25-94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U-UNDETECTED, D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<u>Lander 6.</u>
I.D./Site No.	<u>33-633</u>
County	<u>33</u>
Field No.	<u>LC-SD-03</u>
Stream Mile	<u>Depth 1"</u>
Collected: Date	<u>2-1-94</u>
Time	<u>7:10</u>
By	<u>CSS</u>
Contact Hazard	<u>Unknown</u>
Signature of sampler	<u>Chris Hamard</u>
Send Report to	<u>Wayne Everett</u>
CFO	

Sampling Agency	<input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input checked="" type="checkbox"/> EEP <input type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____
Sample Type	<input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Soil <input type="checkbox"/> Tissue <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> sludge <input type="checkbox"/> Other _____
Sample Priority	<input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient
Date Priority needed:	<u>3/17/94</u>
Billing Code (required)	<u>327.38-11</u>
Field Comments:	_____

For lab use only	
Laboratory Number	<u>94020143</u>
Date received	<u>2/8/94</u>
Time received	<u>10:10</u>
by	<u>LJB</u>
Date reported	
Reviewed by	

ORGANIC ANALYSIS  
Base/Neutral/Acid Extractables

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34609	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordane				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dicofol				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SEDIMENT  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SD-03  
Collected-Date 02/07/94 Time 09:10 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0143  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJ8  
Sampling Agency: HMM/11  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	UK380	34636	4-BROMOPHENYLPHENYL ETHER	UK380	3950B	PCB 1260	UK540
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D<380	34641	4-CHLOROPHENYLPHENYL ETHER	UK380	81649	PCB 1262	UK580
39110	DI-N-BUTYL PHTHALATE	UK380	34386	HEXACHLOROCYCLOPENTADIENE	UK940			
34596	DI-N-OCTYL PHTHALATE	UK380	34391	HEXACHLOROBUTADIENE	UK380			
34326	DIETHYL PHTHALATE	D<380	39700	HEXACHLOROBENZENE	UK380			
34341	DIMETHYL PHTHALATE	UK380	34396	HEXACHLOROETHANE	UK380			
34438	N-NITROSDODIMETHYLAMINE	UK1500	34551	1,2,4-TRICHLOROBENZENE	UK380			
34433	N-NITROSDIPHENYLAMINE	UK380	34581	2-CHLORONAPHTHALENE	UK380			
34428	N-NITROSO DI-N-PROPYLAMINE	UK380	39330	ALDRIN	UK9.4			
34408	ISOPHORONE	UK380	39337	ALPHA BHC	UK9.4			
34447	NITROBENZENE	UK380	39338	BETA BHC	UK19			
34611	2,4-DINITROTOLUENE	UK380	34259	DELTA BHC	UK19			
326	2,6-DINITROTOLUENE	UK380	39340	GAMMA BHC(LINDANE)	UK9.4			
34205	ACENAPHTHENE	UK380	39350	CHLORDANE	UK240			
34200	ACENAPHTHYLENE	D<380	38310	4,4 DDD	UK24			
34220	ANTHRACENE	UK380	39320	4,4 DDE	UK19			
34526	BENZO(a)ANTHRACENE	D<380	39300	4,4 DDT	UK14			
34247	BENZO(a)PYRENE	D<380	39380	DIELDRIN	UK9.4			
34230	BENZO(b)FLUORANTHENE	D<380	34361	ENDOSULFAN I	UK28			
34521	BENZO(ghi)PERYLENE	UK380	34356	ENDOSULFAN II	UK19			
34242	BENZO(k)FLUORANTHENE	D<380	34351	ENDOSULFAN SULFATE	UK14			
34555	DIBENZO(a,h)ANTHRACENE	UK940	39390	ENDRIN	UK19			
34376	FLUORANTHENE	D<380	34355	ENDRIN ALDEHYDE	UK9.4			
34381	FLUORENE	UK380	39410	HEPTACHLOR	UK9.4			
34403	INDENO(1,2,3-cd)PYRENE	UK380	39420	HEPTACHLOR EPOXIDE	UK14			
34696	NAPHTHALENE	D<380	39400	TOXAPHENE	UK1400			
34461	PHENANTHRENE	D<380	39480	METHOXYPHOR	UK71			
34469	PYRENE	D<380	PCB 1016/1242	UK1500				
34320	CHRYSENE	D<380	39488	PCB 1221	UK1600			
34273	BIS(2-CHLOROETHYL)ETHER	UK380	39492	PCB 1232	UK1800			
34278	BIS(2-CHLOROETHOXY)METHANE	UK380	39500	PCB 1248	UK620			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK380	39504	PCB 1254	UK600			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg;fish,mg/kg

Unit supervisor *John S. Stoeck*  
Date 3-25-94

Completed-Date:03/23/94 Time: 3:14:00

Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in conpliance with current quality  
assurance criteria except as qualified.

Comments::U-UNDETECTED, D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	<i>Landes Co.</i>
I.D./Site No	<i>33-633</i>
County	<i>33</i>
Stream Mile	Depth
Collected Date	<i>2-7-94</i>
Time	<i>10:15 AM</i>
By	<i>CJS</i>
Contact Hazard	<i>Unknown</i>
Signature of sampler	<i>Ray L. Hamner</i>
Send Report to	<i>Wayne Everett, CFO</i>

Sampling Agency	APC    DOT DWS    GW SWM    UST EEP    PASI <input checked="" type="checkbox"/> SF    WPC other (specify): _____	Sample Type	Sediment Soil Tissue Water Air sludge Other	Sample Priority	Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine Ambient
			Date Priority needed:	<i>3/14/94</i>	
			Field Comments:	<i>327.38-11</i>	
Billing Code (required)					

ORGANIC ANAL S  
Base/Neutral/Acid Extractables

For lab use only

Laboratory Number *94020144*Date received *2/8/94*Time received *1010* by *LJB*

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chloroethoxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (indane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dieleadrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SEDIMENT  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SD-04  
Collected-Date 02/08/94 Time 10:15 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0144  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJ8  
Sampling Agency: HWH/I1  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE @
34292	BUTYLBENZYL PHTHALATE	U<23*	34636	4-BROMOPHENYLPHENYL ETHER	U<4.6	39508	PCB 1260	U<6.6
39100	BIS(2-ETHYLHEXYL)PHTHALATE	U<92	34641	4-CHLOROPHENYLPHENYL ETHER	U<4.6	31649	PCB 1262	U<7.1
39110	DI-N-BUTYL PHTHALATE	U<12	34386	HEXACHLOROCYCLOPENTADIENE	U<12			
34596	DI-N-OCTYL PHTHALATE	U<23	34391	HEXACHLOROBUTADIENE	U<4.6			
34336	DIETHYL PHTHALATE	U<4.6	39700	HEXACHLOROBENZENE	D<0.33			
34341	DIMETHYL PHTHALATE	U<4.6	34396	HEXACHLOROETHANE	U<4.6			
34438	N-NITROSDIMETHYLAMINE	U<1.9	34551	1,2,4-TRICHLOROBENZENE	U<4.6			
34433	N-NITROSODIPHENYLAMINE	U<17	34581	2-CHLORONAPHTHALENE	U<4.6			
34428	N-NITROSO DI-N-PROPYLAMINE	U<4.6	39330	ALDRIN	U<0.12			
34408	ISOPHORONE	U<4.6	39337	ALPHA BHC	D 1.63			
34447	NITROBENZENE	U<4.6	39338	BETA BHC	D 1.58			
34611	2,4-DINITROTOLUENE	U<4.6	34259	DELTA BHC	D 0.241			
26	2,6-DINITROTOLUENE	U<4.6	39340	GAMMA BHC(LINDANE)	D 0.360			
34205	ACENAPHTHENE	D 17.5	39350	CHLORDANE	U<2.9			
34200	ACENAPHTHYLENE	D 38.6	38310	4,4 DDD	U<0.14			
34220	ANTHRACENE	D 71.5	39320	4,4 DDE	U<0.13			
34525	BENZO(a)ANTHRACENE	D 168	39300	4,4 DDT	U<0.14			
34247	BENZO(a)PYRENE	D 128	39380	DIELDRIN	U<0.12			
34230	BENZO(b)FLUORANTHENE	D 406	34361	ENDOSULFAN I	U<0.17			
34521	BENZO(ghi)PERYLENE	D 38.0	34356	ENDOSULFAN II	U<0.23			
34242	BENZO(k)FLUORANTHENE	D*	34351	ENDOSULFAN SULFATE	U<0.066			
34556	DOBENZO(a,h)ANTHRACENE	D 49.3	39390	ENDRIN	U<0.13			
34676	FLUORANTHENE	D 453	34366	ENDRIN ALDEHYDE	U<0.12			
34381	FLUORENE	D 41.6	39410	HEPTACHLOR	U<0.057			
34403	INDENO(1,2,3-cd)PYRENE	D 102	39420	HEPTACHLOR EPOXIDE	U<0.16			
34636	NAPHTHALENE	D 10.9	39400	TOXAPHENE	U<3.3			
34461	PHENANTHRENE	D 32.2	39480	METHOXYCHLOR	U<0.05			
34469	PYRENE	D 335	PCB 1016/1242		U<9.0			
34320	CHRYSENE	D 165	39488	PCB 1221	U<9.3			
34273	BIS(2-CHLOROETHYL)ETHER	U<4.6	39492	PCB 1232	U<11			
34279	BIS(2-CHLOROETHOXY)METHANE	U<4.6	39500	PCB 1248	U<7.5			
34283	BIS(2-CHLOROISOPROPYL)ETHER	U<4.6	39504	PCB 1254	U<7.6			

@Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg;fish,mg/kg

Unit supervisor  
Date 3/25/94

Completed-Date:03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified.

Comments: U-UNDETECTED, D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.  
\* ALL RESULTS IN MG/KG(FPPM). \* SET= PRESENT-MEASURED AT BEING>BIFLUORANTHENE.

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source <u>Lander G.</u>	Sampling Agency <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input type="checkbox"/> EEP <input checked="" type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify): _____	Sample Type <input checked="" type="checkbox"/> Sediment <input type="checkbox"/> Soil <input type="checkbox"/> Tissue <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> sludge <input type="checkbox"/> Other	Sample Priority <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient
I.D./Site No. <u>33-633</u>	Field No. <u>LC-SD-05</u>		Date Priority needed: <u>3/14/94</u>
County <u>33</u>	Stream Mile _____	Depth <u>2"</u>	
Collected: Date <u>2-7-94</u>	Time <u>2001 PM</u>	By <u>CJS</u>	
Contact Hazard <u>Unknown</u>			
Signature of sampler <u>Ray Slingsby</u>			
Send Report to <u>Wayne Everett,</u> <u>CFO</u>	Billing Code (required) <u>327.38-11</u>		
Field Comments: _____			

## ORGANIC ANAL S

For lab use only

Laboratory Number 94020A3

Date received 2/8/94

Time received 1010 by LBB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

	Base/Neutral
34292	butylbenzylphthalate
39100	bis(2-ethylhexyl)phthalate
39110	di-n-butylphthalate
34596	di-n-octylphthalate
34336	diethylphthalate
34341	dimethylphthalate
34438	n-nitrosodimethylamine
34433	n-nitrosodiphenylamine
34428	n-nitroso di-n-propylamine
34408	isophorone
34417	nitrobenzene
34611	2,4-dinitrotoluene
34626	2,6-dinitrotoluene
34205	acenaphthene
34200	acenaphthylene
34220	anthracene
34526	benzo(a)anthracene
34247	benzo(a)pyrene
34230	benzo(b)fluoranthene
34521	benzo(ghi)perylene
34242	benzo(k)fluoranthene
34320	chrysene
34556	dibenzo(a,h)anthracene
34376	fluoranthene
34381	fluorene
34403	indeno(1,2,3-cd)pyrene
34696	naphthalene
34461	phenanthrene
34469	pyrene

	*	Base/Neutral
34273		bis(2-chloroethyl) ether
34278		bis(2-chloroethoxy)methane
34283		bis(2-chloroisopropyl) ether
34636		4-bromophenylphenyl ether
34641		4-chlorophenylphenyl ether
34386		hexachlorocyclopentadiene
34391		hexachlorobutadiene
39700		hexachlorobenzene
34396		hexachloroethane
34551		1,2,4-trichlorobenzene
34581		2-chloronaphthalene
39330		aldrin
39337		a-BHC
39338		b-BHC
34259		d-BHC
39340		g-BHC (lindane)
39350		chlordan
38310		4,4'-DDD
39320		4,4'-DDE
39300		4,4'-DDT
39380		dieldrin
34361		endosulfan I
34356		endosulfan II
34351		endosulfan sulfate
39390		endrin
34366		endrin aldehyde
39410		heptachlor
39420		heptachlor epoxide
39400		toxaphene

	*	Base/Neutral
39480		methoxychlor
		PCB-1016/1242
39488	✓	PCB-1221
39492		PCB-1232
39500		PCB-1248
39504		PCB-1254
39508		PCB-1260
81649	✓	PCB-1262

	*	Acid Extractable
34552		4-chloro-3-methyl phenol
34586		2-chlorophenol
34601		2,4-dichlorophenol
34606		2,4-dimethylphenol
24616		2,4-dinitrophenol
34657		2-methyl-4,6-dinitrophenol
34591		2-nitrophenol
34646		4-nitrophenol
39032		pentachlorophenol
34693		phenol
34681		2,4,6-trichlorophenol

## Herbicides

} Other

\* please check desired parameter

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: SEDIMENT  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-SD-05  
Collected Date 02/07/94 Time 14:00 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 34-02-0145  
Branch Lab Number  
Received Date 02/08/94 Time 10:10 By LJB  
Sampling Agency: HAM/LI  
Sample Priority:  
Emergency/Non-Emergency/Mandatory/Alibi/Incident/

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE *	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE *	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE *
34292 BUTYLBENZYL PHthalATE	U<37*		34636 4-BROMOPHENYLPHENYL ETHER	U<7.5		34508 363 1260		U<11
39100 Bis(2-ethylhexyl)PHthalATE	D 2710		34641 4-CHLOROPHENYLPHENYL ETHER	U<7.5		81649 PCB 1252		J<11
39110 Di-N-butyl PHthalATE	U<75		34535 HEKACHLOROCYCLOPENTADIENE	U<19				
34595 Di-N-octyl PHthalATE	U<75		34391 HEXAHCLOROBUTADIENE	U<7.5				
34336 Diethyl PHthalATE	U<15		39700 HEXAHCLOROBENZENE	U<3.3				
34341 Dimethyl PHthalATE	U<7.5		34336 HEXAHCLOROETHANE	U<7.5				
34438 N-NITROSDIMETHYLMETHYLAMINE	U<3.0		34551 1,2,4-TRICHLOROBENZENE	U<7.5				
34433 N-NITROSDIPHENYLAMINE	U<7.5		34581 2-CHLOROPHThALENE	U<7.5				
34428 N-NITROSO DI-N-PROPYLAMINE	U<7.5		39330 ALDRIN	U<0.19				
34408 ISOPHORONE	U<7.5		39332 ALPHA BHC	0 4.0				
34447 NITROBENZENE	U<7.5		39338 BETA BHC	0 9.8				
34511 2,4-DINITROTOLUENE	U<7.5		34593 DELTA BHC	0 1.6				
34526 2,6-DINITROTOLUENE	U<7.5		39340 GAMMA BHC(LINDANE)	0 0.237				
34205 ACENAPHTHENE	U<7.5		39350 CHLORDANE	U<4.7				
34200 ACENAPHTHYLENE	D 35.9		38310 4,4 DDD	U<0.47				
34220 ANTHRACENE	D 27.7		39320 4,4 DDE	U<0.37				
34525 BENZO(a)ANTHRACENE	D 113		39330 4,4 DDT	U<0.23				
34247 BENZO(a)PYRENE	D 103		39380 DIELDRIN	U<0.37				
34230 BENZO(b)FLUORANTHENE	D#215		34561 ENDOSULFAN I	U<0.28				
34521 BENZO(d)PERYLENE	D 82.4		34355 ENDOSULFAN II	U<0.34				
34242 BENZO(k)FLUORANTHENE	D#		34551 ENDOSULFAN SULFATE	U<0.55				
34553 BIENZOTOLUANTHENE	D 23.4		39390 ENDRIN	U<0.37				
34376 FLUORANTHENE	D 156		34366 ENDRIN ALDEHYDE	U<0.19				
34381 FLUORENE	D 21.7		33416 HEPTACHLOR	U<0.38				
34403 INDENO(1,2,3-4)PYRENE	D 102		39420 HEPTACHLOR EPOXIDE	U<0.25				
34696 NAPHTHALENE	D 19.7		39400 TOXAPHENE	U<27				
34461 PHEANTHREN	D 97.6		39480 METHOXYCHLOR	U<1.3				
34469 PYRENE	D 147		PCB 1016/1242	U<15				
34320 CHRYSENE	D 141		39488 PCB 1221	U<16				
34273 Bis(2-CHLOROETHYL)ETHER	U<7.5		39492 PCB 1232	U<18				
34278 Bis(2-CHLOROETHOXYSOXYMETHANE	U<7.5		39500 PCB 1248	U<12				
34253 Bis(2-CHLORODISOPROPYL)ETHER	U<7.5		39504 PCB 1254	U<12				

\*Reporting Units, unless otherwise noted:

\* Water, Ag/Al sediment/kg/g/ug/g/mg/mg/

\*\* ALL RESULTS IN MG/KG (PPM), # BOTH PRESENT-MEASURED AS BENZENE/CHLOROBENZENE,

*Cathie Shire*

Completed Date: 03/23/94 Time: 2:MAC

Date 3/25/94  
Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in compliance with current quality  
assurance criteria except as qualified.

Organic/Chloro-Organic, Analyzed, THIS TABLE IS THE SAMPLE QUANTIFICATION LIMIT,  
ALL RESULTS IN MG/KG (PPM).

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	Lander G.
I.D./Site No.	33-633
County	33
Stream Mile	Depth
Collected: Date	Time
Contact Hazard	
Signature of sampler	
Send Report to	Wayne Everett CFO

Sampling Agency	Agency
APC	DOT
DWS	GW
SWM	UST
EEP	<input checked="" type="checkbox"/> PASI
X SF	WPC
other (specify):	
Sample Type	Type
Sediment	<input type="checkbox"/>
Soil	<input type="checkbox"/>
Tissue	<input type="checkbox"/>
Water	<input type="checkbox"/>
Air	<input type="checkbox"/>
sludge	<input type="checkbox"/>
Other	<input checked="" type="checkbox"/> Waste
Sample Priority	Priority
Emergency	<input type="checkbox"/>
X Legal	<input checked="" type="checkbox"/>
Routine	<input type="checkbox"/>
Ambient	<input type="checkbox"/>
Date Priority needed:	3/14/94
Billing Code (required)	327.38-11
Field Comments:	

ORGANIC ANALYSIS	Base/Neutral/Acid Extractables
For lab use only	
Laboratory Number	94020149
Date received	2/8/94
Time received	1010 by LIB
Date reported	
Reviewed by	

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chlorooctoxy)methane		PCB-1016/1242	34586	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	<input checked="" type="checkbox"/> di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	<input checked="" type="checkbox"/> 4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate*	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34616	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	<input checked="" type="checkbox"/> 2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	<input checked="" type="checkbox"/> g-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordan				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	<input checked="" type="checkbox"/> dicofol				
34320	<input checked="" type="checkbox"/> chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	<input checked="" type="checkbox"/> pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments:

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: WASTE  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-WS-01  
Collected-Date 02/07/94 Time 10:40 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0149  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJS  
Sampling Agency: HWM/11  
Sample Priority:  
Emergency[N] Legal[Y] Routine[N] Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	UK9.7*	34636	4-BROMOPHENYLPHENYL ETHER	UK3.3	39508	PCB 1260	UK5.5
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 32.3	34641	4-CHLOROPHENYLPHENYL ETHER	UK3.9	81649	PCB 1252	UK6.0
39110	DI-N-BUTYL PHTHALATE	UK7.8	34666	HEXA CHLOROCYCLOPENTADIENE	UK9.7			
34596	DI-N-DODECYL PHTHALATE	UK9.7	34391	HEXA CHLOROBUTADIENE	UK3.9			
34335	DIETHYL PHTHALATE	UK3.9	39700	HEXA CHLOROBENZENE	D 0.108			
34341	DIMETHYL PHTHALATE	UK3.9	34396	HEXA CHLOROETHANE	UK3.9			
34438	N-NITROSO DIMETHYLAMINE	UK1.6	34551	1,2,4-TRICHLOROBENZENE	UK3.9			
34433	N-NITROSO DIPHENYLAMINE	UK3.9	34581	2-CHLORONAPHTHALENE	UK3.9			
34428	N-NITROSO DI-N-PROPYLAMINE	UK3.9	39330	ALDRIN	UK0.098			
34408	ISOPHORONE	UK3.9	39337	ALPHA BHC	D 1.68			
34447	NITROBENZENE	UK3.9	39338	BETA BHC	D 1.54			
34411	2,4-DINITROTOLUENE	UK9.7	34259	DELTA BHC	D 0.288			
26	2,6-DINITROTOLUENE	UK3.9	39340	GAMMA BHC(LINDANE)	D 0.238			
34205	ACENAPHTHENE	UK19	39350	CHLORDANE	UK2.4			
34200	ACENAPHTHYLENE	D 10.6	38310	4,4 DDD	UK0.24			
34220	ANTHRACENE	D 15.3	39320	4,4 DDE	UK0.13			
34526	BENZO(a)ANTHRACENE	D 44.4	39300	4,4 DDT	UK0.072			
34247	BENZO(a)PYRENE	D 41.2	39380	DIELDRIN	UK0.097			
34230	BENZO(b)FLUORANTHENE	D#94.4	34361	ENDOSULFAN I	UK0.15			
34521	BENZO(g,h)PERYLENE	D 26.8	34356	ENDOSULFAN II	UK0.097			
34242	BENZO(k)FLUORANTHENE	D#	34351	ENDOSULFAN SULFATE	UK0.073			
34555	DI BENZO(a,h)ANTHRACENE	D 11.0	39390	ENDRIN	UK0.13			
34376	FLUORANTHENE	D 86.1	34366	ENDRIN ALDEHYDE	UK0.097			
34381	FLUORENE	D<19	39410	HEPTACHLOR	UK0.097			
34403	INDENO(1,2,3-CD)PYRENE	D 30.1	39420	HEPTACHLOR EPOXIDE	UK0.073			
34636	NAPHTHALENE	D 8.33	39400	TOXAPHENE	UK7.0			
34461	PHENANTHRENE	D 25.5	39480	METHOXYPHCLOR	UK0.68			
34469	PYRENE	D 78.5		PCB 1016/1242	UK7.5			
34320	CHRYSENE	D 51.2	39438	PCB 1221	UK8.3			
34273	BIS(2-CHLOROETHYL)ETHER	UK3.9	39492	PCB 1232	UK9.3			
34278	BIS(2-CHLOROETHOXY)METHANE	UK3.9	39500	PCB 1248	UK6.4			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK3.9	39504	PCB 1254	UK6.4			

\*Reporting Units, unless otherwise noted:  
water, ug/l; sediment, ug/kg; fish, ug/kg

Unit supervisor *Cathy Steck*  
Date 3-25-94

Completed-Date 03/23/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in compliance with current quality  
assurance criteria except as qualified.

Comments: :U-UNDETECTED. D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

ALL RESULTS IN PPM(FPM). # BOTH PRESENT-MEASURED AS SERIC(B)FLUORANTHENE.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source	Lander Co.
I.D./Site No.	33-633
County	33
Stream Mile	Depth 2"
Collected: Date	2/7/94
Contact Hazard	Unknown
Signature of sampler	Tom Starnard
Send Report to	Wayne Everett, CFO

Sampling Agency	
APC	DOT
DWS	GW
SWM	UST
EEP	<input checked="" type="checkbox"/> PASI
SF	<input checked="" type="checkbox"/> WPC
other (specify):	
Billing Code (required)	327.38-11
Sample Type	
Sediment	
Soil	
Tissue	
Water	
Air	
sludge	
Other	Waste
Sample Priority	
Emergency	
<input checked="" type="checkbox"/> Legal	
<input checked="" type="checkbox"/> Routine	
Ambient	
Date Priority needed:	3/14/94
Field Comments:	

ORGANIC ANAL ;  
Base/Neutral/Acid Extractables

For lab use only

Laboratory Number 94020150

Date received 2/8/94

Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chloroethoxy)methane		PCB-1016/1242	34580	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenoxyphenyl ether	39492	PCB-1232	34606	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenoxyphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dinethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isophorone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (indane)				
34526	benzo(a)anthracene	39350	chlordane				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(g,h)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dieleadrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments:

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: WASTE  
Sample Site Code: 33-633  
Sample Source: LANDES CO,  
County: 33  
Field No: LC-WS-02  
Collected-Date 02/07/94 Time 10:50 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0150  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJ3  
Sampling Agency: HWM/LI  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	UK600	34636	4-BROMOPHENYLPHENYL ETHER	UK600	39508	PCB 1260	JK430
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 871	34641	4-CHLOROPHENYLPHENYL ETHER	UK600	81649	PCB 1262	UK460
39110	DI-N-BUTYL PHTHALATE	UK600	34385	HEXACHLOROCYCLOPENTADIENE	UK1500			
34596	DI-N-OCTYL PHTHALATE	UK600	34391	HEXACHLOROBUTADIENE	UK600			
34365	DIETHYL PHTHALATE	JK600	39700	HEXACHLOROBENZENE	JK330			
34341	DIMETHYL PHTHALATE	UK600	34396	HEXACHLOROETHANE	UK600			
34438	N-NITROSO DIMETHYLAMINE	UK1200	34551	1,2,4-TRICHLOROBENZENE	UK600			
34433	N-NITROSO DIPHENYLAMINE	UK600	34581	2-CHLORONAPHTHALENE	UK600			
34428	N-NITROSO DI-N-PROPYLAMINE	UK600	39330	ALDRIN	UK15			
34408	ISOPHORONE	UK600	39337	ALPHA BHC	D 33.8			
34447	NITROBENZENE	UK600	39338	BETA BHC	D 25.3			
34311	2,4-DINITROTOLUENE	UK600	34259	DELTA BHC	DK15			
26	2,6-DINITROTOLUENE	UK600	39340	GAMMA BHC(LINDANE)	DK7.5			
34205	ACENAPHTHENE	UK600	39350	CHLORDANE	JK378			
34200	ACENAPHTHYLENE	DK600	38310	4,4 DDD	UK19			
34220	ANTHRACENE	DK600	39320	4,4 DDE	UK15			
34526	BENZO(a)ANTHRACENE	D 631	39300	4,4 DDT	UK20			
34247	BENZO(a)PYRENE	D 729	39380	DIELDRIN	UK15			
34230	BENZO(b)FLUORANTHENE	D 1100	34361	ENDOSULFAN I	UK23			
34521	BENZO(g,h)PERYLENE	D 669	34356	ENDOSULFAN II	UK30			
34242	BENZO(k)FLUORANTHENE	DK600	34351	ENDOSULFAN SULFATE	UK11			
34555	DI(BENZO(a,g))ANTHRACENE	UK1500	39390	ENDRIN	UK30			
34376	FLUORANTHENE	D 1070	34366	ENDRIN ALDEHYDE	UK15			
34381	FLUORENE	DK600	39410	HEPTACHLOR	UK7.5			
34403	INDENO(1,2,3-cd)PYRENE	D 751	39420	HEPTACHLOR EPOXIDE	UK11			
34695	NAPHTHALENE	JK600	39400	TOXAPHENE	UK1100			
34461	PHENANTHRENE	DK600	39480	METHOXYCHLOR	UK110			
34463	PYRENE	D 1080		PCB 1016/1242	UK1170			
34320	CHRYSENE	D 806	39488	PCB 1221	UK1300			
34273	BIS(2-CHLOROETHYL)ETHER	UK600	39492	PCB 1232	JK1500			
34273	BIS(2-CHLOROETHOXY)METHANE	UK600	39500	PCB 1248	UK990			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK600	39504	PCB 1254	UK480			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg;fish,ag/kg

F4-0162A(B)REV 5/90

Unit supervisor *Carl H. Stacker*  
Date 3/25/94

Completed-Date 03/29/94 Time: 5:16AC

Signature of supervisor indicates that the work was performed in accordance with  
federally approved procedures where available and in compliance with current quality  
assurance criteria except as qualified.

Comments: U-UNDETECTED, D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

## STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source <u>Lander Co.</u>	I.D./Site No <u>33-633</u>	Sampling Agency <input type="checkbox"/> APC <input type="checkbox"/> DOT <input type="checkbox"/> DWS <input type="checkbox"/> GW <input type="checkbox"/> SWM <input type="checkbox"/> UST <input checked="" type="checkbox"/> EEP <input type="checkbox"/> PASI <input checked="" type="checkbox"/> SF <input type="checkbox"/> WPC <input type="checkbox"/> other (specify) _____
County <u>33</u>	Field No. <u>LC-WS-03</u>	Sample Type <input type="checkbox"/> Sediment <input type="checkbox"/> Soil <input type="checkbox"/> Tissue <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> sludge <input checked="" type="checkbox"/> Other <u>Waste</u>
Stream Mile _____	Depth <u>2"</u>	Sample Priority <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Legal <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Ambient
Collected Date <u>2-7-94</u>	Time <u>11:05</u> By <u>CJS</u>	Date Priority needed: <u>3/14/94</u>
Contact Hazard <u>Unknown</u>	Field Comments: <u>327.38-11</u>	
Signature of sampler <u>Greg Shannon</u>		
Send Report to <u>Wayne Everett</u> , <u>CFO</u>		

Billing Code (required) <u>327.38-11</u>
---

ORGANIC ANAL ;  
Base/Neutral/Acid Extractables

For lab use only

Laboratory Number 94020151Date received 2/8/94Time received 1010 by LJB

Date reported \_\_\_\_\_ by \_\_\_\_\_

Reviewed by \_\_\_\_\_

*	Base/Neutral	*	Base/Neutral	*	Base/Neutral	*	Acid Extractable
34292	butylbenzylphthalate	34273	bis(2-chloroethyl) ether	39480	methoxychlor	34552	4-chloro-3-methyl phenol
39100	bis(2-ethylhexyl)phthalate	34278	bis(2-chloroethoxy)methane		PCB-1016/1242	34580	2-chlorophenol
39110	di-n-butylphthalate	34283	bis(2-chloroisopropyl) ether	39488	PCB-1221	34601	2,4-dichlorophenol
34596	di-n-octylphthalate	34636	4-bromophenylphenyl ether	39492	PCB-1232	34603	2,4-dimethylphenol
34336	diethylphthalate	34641	4-chlorophenylphenyl ether	39500	PCB-1248	24616	2,4-dinitrophenol
34341	dimethylphthalate	34386	hexachlorocyclopentadiene	39504	PCB-1254	34657	2-methyl-4,6-dinitrophenol
34438	n-nitrosodimethylamine	34391	hexachlorobutadiene	39508	PCB-1260	34591	2-nitrophenol
34433	n-nitrosodiphenylamine	39700	hexachlorobenzene	81649	PCB-1262	34646	4-nitrophenol
34428	n-nitroso di-n-propylamine	34396	hexachloroethane			39032	pentachlorophenol
34408	isopherone	34551	1,2,4-trichlorobenzene			34694	phenol
34447	nitrobenzene	34581	2-chloronaphthalene			34681	2,4,6-trichlorophenol
34611	2,4-dinitrotoluene	39330	aldrin				
34626	2,6-dinitrotoluene	39337	a-BHC				
34205	acenaphthene	39338	b-BHC				
34200	acenaphthylene	34259	d-BHC				
34220	anthracene	39340	g-BHC (lindane)				
34526	benzo(a)anthracene	39350	chlordane				
34247	benzo(a)pyrene	38310	4,4'-DDD				
34230	benzo(b)fluoranthene	39320	4,4'-DDE				
34521	benzo(ghi)perylene	39300	4,4'-DDT				
34242	benzo(k)fluoranthene	39380	dieldrin				
34320	chrysene	34361	endosulfan I				
34556	dibenzo(a,h)anthracene	34356	endosulfan II				
34376	fluoranthene	34351	endosulfan sulfate				
34381	fluorene	39390	endrin				
34403	indeno(1,2,3-cd)pyrene	34366	endrin aldehyde				
34696	naphthalene	39410	heptachlor				
34461	phenanthrene	39420	heptachlor epoxide				
34469	pyrene	39400	toxaphene				

\* please check desired parameter

Lab Comments: \_\_\_\_\_

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: WASTE  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-WS-03  
Collected-Date 02/07/94 Time 11:05 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0151  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJS  
Sampling Agency: HWM/II  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLBENZYL PHTHALATE	UK330	34636	4-BROMOPHENYLPHENYL ETHER	UK330	39508	PCB 1260	UK470
39100	BIS(2-ETHYLHEXYL)PHTHALATE	D 2910	34841	4-CHLOROPHENYLPHENYL ETHER	UK330	81649	PCB 1262	UK500
29110	DI-N-BUTYL PHTHALATE	UK330	34386	HEXAChLOROCYCLOPENTADIENE	UK620			
34536	DI-N-OCTYL PHTHALATE	UK310	34391	HEXAChLOROBUTADIENE	UK330			
34336	DIETHYL PHTHALATE	D<330	39700	HEXAChLOROBENZENE	UK330			
34341	DIMETHYL PHTHALATE	UK330	34396	HEXAChLOROETHANE	UK330			
34438	N-NITROSO DIMETHYLAMINE	UK1300	34551	1,2,4-TRICHLOROBENZENE	UK330			
34433	N-NITROSO DIPHENYLAMINE	UK330	34581	2-CHLORONAPHTHALENE	UK330			
34429	N-NITROSO DI-N-PROPYLAMINE	UK330	39330	ALDRIN	UK8.1			
34408	ISOPHORONE	UK330	39337	ALPHA BHC	UK8.1			
34447	NITROBENZENE	UK330	39338	BETA BHC	UK16			
74611	2,4-DINITROTOLUENE	UK330	34259	DELTA BHC	UK16			
526	2,6-DINITROTOLUENE	UK330	39340	GAMMA BHC(LINDANE)	UK8.1			
34205	ACENAPHTHENE	UK330	39350	CHLORDANE	UK407			
34200	ACENAPHTHYLENE	D<330	38310	4,4 DDD	UK41			
34220	ANTHRACENE	UK330	39320	4,4 DDE	UK16			
34525	BENZO(a)ANTHRACENE	UK330	39300	4,4 DDT	UK22			
34247	BENZO(a)PYRENE	UK330	39380	DIELDRIN	UK16			
34230	BENZO(b)FLUORANTHENE	UK330	34361	ENDOSULFAN I	UK24			
34521	BENZO(ghi)PERYLENE	UK330	34356	ENDOSULFAN II	UK33			
34242	BENZO(k)FLUORANTHENE	UK330	34351	ENDOSULFAN SULFATE	UK12			
34535	DIBENZO(a,h)ANTHRACENE	UK330	39390	ENDRIN	UK22			
34376	FLUORANTHENE	UK330	34366	ENDRIN ALDEHYDE	UK16			
34361	FLUGRENE	UK330	39410	HEPTACHLOR	UK8.1			
34403	INDENO(1,2,3-cd)PYRENE	UK330	39420	HEPTACHLOR EPOXIDE	UK12			
34635	NAPHTHALENE	D<330	39400	TOXAPHENE	UK1200			
34461	PHENANTHRENE	D<330	39480	METHOXYPYRENE	UK57			
34469	PYRENE	UK330	PCB 1016/1242	UK1300				
34320	CHRYSENE	UK330	39488	PCB 1221	UK1400			
34273	BIS(2-CHLOROETHYL)ETHER	UK330	39492	PCB 1232	UK1600			
34273	BIS(2-CHLOROETHOXY)METHANE	UK330	39500	PCB 1248	UK530			
34283	BIS(2-CHLOROISOPROPYL)ETHER	UK330	39504	PCB 1254	UK520			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg; fish,mg/kg

Unit supervisor  
Date 3-25-94

Completed-Date 03/26/94 Time: By:MAC

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as classified.

Comments: U-UNDETECTED, D-DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

STATE OF TENNESSEE - ENVIRONMENTAL LABORATORIES

Sample Source 3 Landes Co.  
I.D./Site No. 33-633  
County 33 Field No. LC-W5-04  
Stream Mile \_\_\_\_\_ Depth 1"  
Collected Date 2/1/94 Time 11:25 AM By CJS  
Contact Hazard Unknown  
Signature of sampler Wayne Sharp  
Send Report to Wayne Everett  
CFO

<b>Sampling Agency</b>	<b>Sample Type</b>	<b>Sample Priority</b>
<input type="checkbox"/> APC	Sediment	<input type="checkbox"/> Emergency
<input type="checkbox"/> DWS	Soil	<input checked="" type="checkbox"/> Legal
<input type="checkbox"/> SWM	Tissue	<input checked="" type="checkbox"/> Routine
<input checked="" type="checkbox"/> EEP	Water	<input type="checkbox"/> Ambient
<input checked="" type="checkbox"/> SF	Air	
<input type="checkbox"/> other (specify): <hr/>	sludge Other <u>Waste</u>	Date, Priority needed: <u>3/14/94</u>
<b>Billing Code (required)</b>		<b>Field Comments:</b> <hr/>
<b>327.38-11</b>		

**ORGANIC ANAL S**  
**Base/Neutral/Acid Extractables**

For lab use only

Laboratory Number 94060152

Date received 2/8/94

Time received 10/10 by LJB

Date reported by

Reviewed by

	*	Base/Neutral
34292		butylbenzylphthalate
39100		bis(2-ethylhexyl)phthalate
39110		di-n-butylphthalate
34596		di-n-octylphthalate
34336		diethylphthalate
34341		dimethylphthalate
34438		n-nitrosodimethylamine
34433		n-nitrosodiphenylamine
34428		n-nitroso di-n-propylamine
34408		isophorone
34447		nitrobenzene
34611		2,4-dinitrotoluene
34626		2,6-dinitrotoluene
34205		acenaphthene
34200		acenaphthylene
34220		anthracene
34526		benzo(a)anthracene
34247		benzo(a)pyrene
34230		benzo(b)fluoranthene
34521		benzo(ghi)perylene
34242		benzo(k)fluoranthene
34320		chrysene
34556		dibenz(a,h)anthracene
34376		fluoranthene
34381		fluorene
34403		indeno(1,2,3-cd)pyrene
34696		naphthalene
34461		phenanthrene
34469		pyrene

	*	Base/Neutral
34273		bis(2-chloroethyl) ether
34278		bis(2-chloroethoxy)methane
34283		bis(2-chloroisopropyl) ether
34636		4-bromophenylphenyl ether
34641		4-chlorophenylphenyl ether
34386		hexachlorocyclopentadiene
34391		hexachlorobutadiene
39700		hexachlorobenzene
34396		hexachloroethane
34551		1,2,4-trichlorobenzene
34581		2-chloronaphthalene
39330		aldrin
39337		a-BHC
39338		b-BHC
34259		d-BHC
39340		e-BHC (indane)
39350		chlordan
38310		4,4'-DDD
39320		4,4'-DDE
39300		4,4'-DDT
39380		dieldrin
34361		endosulfan I
34356		endosulfan II
34351		endosulfan sulfate
39390		endrin
34366		endrin aldehyde
39410		heptachlor
39420		heptachlor epoxide
39400		toxaphene

*	Base/Neutral
39480	methoxychlor
	PCB-1016/1242
39488	PCB-1221
39492	PCB-1232
39500	PCB-1248
39504	PCB-1254
39508	PCB-1260
81649	PCB-1262

*	Acid Extractable
34552	4-chloro-3-methyl phenol
34586	2-chlorophenol
34601	2,4-dichlorophenol
34603	2,4-dimethylphenol
24616	2,4-dinitrophenol
34657	2-methyl-4,6-dinitrophenol
34591	2-nitrophenol
34646	4-nitrophenol
39033	pentachlorophenol
34694	phenol
34681	2,4,6-trichlorophenol

## 1.1 Herbicides

### { Other

\* please check desired parameter

### Lab Comments

STATE OF TENNESSEE  
ENVIRONMENTAL LABORATORIES  
ORGANIC ANALYSIS, EXTRACTABLES

Sample Type: WASTE  
Sample Site Code: 33-633  
Sample Source: LANDES CO.  
County: 33  
Field No: LC-WS-04  
Collected-Date 02/07/94 Time 11:25 By CJS  
Date Priority Needed 03/14/94

Laboratory Number 94-02-0152  
Branch Lab Number  
Received-Date 02/08/94 Time 10:10 By LJ3  
Sampling Agency: HWM/II  
Sample Priority:  
Emergency[N]Legal[Y]Routine[N]Ambient[N]

CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE	CODE	BASE/NEUTRAL EXTRACTABLES	VALUE
34292	BUTYLEBENZYL PHTHALATE	UK340	34636	4-BROMOPHENYLPHENYL ETHER	UK340	39508	PCB 1260	UK480
39100	BIS(2-ETHYLHEXYL)PHTHALATE	U 629	34641	4-CHLOROPHENYLPHENYL ETHER	UK340	31649	PCB 1262	UK520
39110	DI-N-BUTYL PHTHALATE	DK340	34386	HEXAChLOROCYCLOPENTADIENE	UK340			
34596	DI-N-OCTYL PHTHALATE	UK340	34391	HEXAChLOROBUTADIENE	UK340			
34336	DIETHYL PHTHALATE	DK340	39700	HEXAChLOROBENZENE	UK330			
34341	DIMETHYL PHTHALATE	UK340	34395	HEXAChLOROETHANE	UK340			
34428	N-NITROSDIMETHYLAMINE	UK1400	34551	1,2,4-TRICHLOROBENZENE	UK340			
34433	N-NITROSOOIPHENYLAMINE	UK340	34581	1-CHLORONAPHTHALENE	UK340			
34428	N-NITROSO DI-N-PROPYLAMINE	UK340	39330	ALDRIN	UK8.4			
34408	ISOPHORONE	UK340	39337	ALPHA BHC	UK8.4			
34447	NITROBENZENE	UK340	39338	BETA BHC	UK17			
34611	2,4-DINITROTOLUENE	UK340	34259	DELTA BHC	UK17			
26	2,6-DINITROTOLUENE	UK340	39340	GAMMA BHC(LINDANE)	UK8.4			
34205	ACENAPHTHENE	DK340	39350	CHLORDANE	UK210			
34200	ACENAPHTHYLENE	DK340	39310	4,4 DDD	UK21			
34220	ANTHRACENE	DK340	39320	4,4 DDE	UK17			
34526	BENZO(a)ANTHRACENE	U 604	39300	4,4 DDT	UK13			
34247	BENZO(a)PYRENE	U 657	39380	DIENDRIN	UK8.4			
34230	BENZO(b)FLUORANTHENE	U#1280	34361	ENDOSULFAN I	UK25			
34521	BENZO(g,h)PERYLENE	U 501	34356	ENDOSULFAN II	UK34			
34242	BENZO(k)FLUORANTHENE	U#	34351	ENDOSULFAN SULFATE	UK13			
34556	OBENZO(a,h)ANTHRACENE	U 840	39390	ENDRIN	UK17			
34376	FLUORANTHENE	U 826	34366	ENDRIN ALDEHYDE	UK8.4			
34381	FLUORENE	U 340	39410	HEPTACHLOR	UK8.4			
34403	INDENO(1,2,3-cd)PYRENE	U 595	39420	HEPTACHLOR EPOXIDE	UK13			
34636	NAPHTHALENE	DK340	39400	TOXAPHENE	U 1200			
34461	PHENANTHRENENE	U 404	39480	METHOXYPYRENE	U 160			
34469	PYRENE	U 777	PCB 1016/1142	U 1300				
34320	CHRYSENE	U 711	39485	PCB 1221	U 1400			
34273	BIS(2-CHLOROETHYL)ETHER	UK340	39492	PCB 1232	U 1600			
34278	BIS(2-CHLOROETHOXY)METHANE	U 340	39500	PCB 1248	UK550			
34263	BIS(2-CHLOROISOPROPYL)ETHER	U 340	39504	PCB 1254	UK540			

Reporting Units, unless otherwise noted:  
water, ug/l; sediment,ug/kg;fish,mg/kg

Comment: U=UNDETECTED, D=DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

# BOTH PRESENT=MEASURED AS BENZO(b)FLUORANTHENE.

FH-1016LAB (REV 5/30)

Unit supervisor *Cathie Stark*  
Date 3-25-94

Signature of supervisor indicates that the work was performed in accordance with

federally approved procedures where available and in compliance with current quality

assurance criteria except as qualified.

Completed-Date 03/13/94 Time: By:MAC

Comment: U=UNDETECTED, D=DETECTED. THIS VALUE IS THE SAMPLE QUANTITATION LIMIT.

# BOTH PRESENT=MEASURED AS BENZO(b)FLUORANTHENE.

Site No. TND 003328960  
Appendix C

4-Mile Site Radius Map

**OVERSIZED**

**DOCUMENT**

Site No. TND 003328960  
Appendix D

Photographs

**UNSCANNABLE**

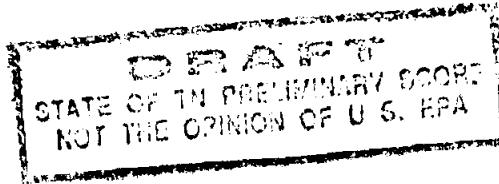
**MEDIA**

**(PHOTOGRAPHS)**

Record Information

1. Site Name: Landes Company  
(as entered in CERCLIS)
2. Site CERCLIS Number: TND 003328960
3. Site Reviewer: Craig Stannard
4. Date: March 22, 1994
5. Site Location: Chattanooga/Hamilton County, Tennessee  
(City/County,State)
6. Congressional District: 3
7. Site Coordinates: Single

Latitude: 34 59'43.0"                    Longitude: 85 18'30.0"



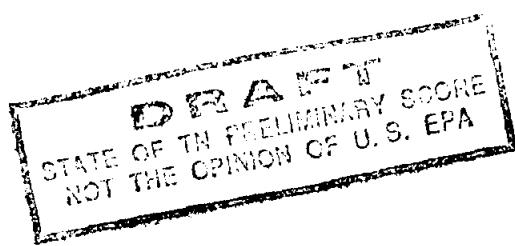
Site Description

1. Setting: Urban
2. Current Owner: Private - Industrial
3. Current Site Status: Inactive
4. Years of Operation: Inactive Site, from and to dates: 1947 to 1992
5. How Initially Identified: State/Local Program
6. Entity Responsible for Waste Generation:

- Manufacturing
  - Plastic & Rubber
  - Paints, Varnishes
  - Industrial Organic Chem.
  - Misc. Chemical Products
  - Metal Forging and Stamping
  - Fabr. Struc. Metal Prod.
  - Other Manufacturing
- Recyclers
- Landfill
  - Industrial

7. Site Activities/Waste Deposition:

- Waste Piles
- Industrial Landfill
- Drum/Container Storage
- Illegal Dumping
- Unauthorized Dumping by a Third Party
- Tanks - Below Ground
- Discharge to Sewer/Surface Water
- Recycling
- Spill



Waste Description

8. Wastes Deposited or Detected Onsite:

- Organic Chemicals
- Inorganic Chemicals
- Solvents
- Paints/Pigments
- Metals

Response Actions

9. Response/Removal Actions:

- Other Removal Action Has Occurred

RCRA Information

10. For All Active Facilities, RCRA Site Status:

- Not Applicable

Demographic Information

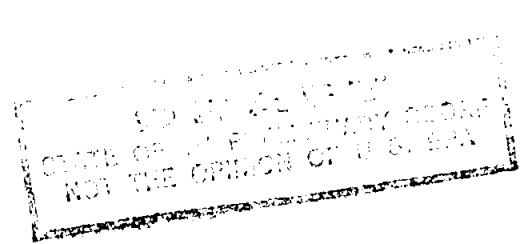
11. Workers Present Onsite: Yes

12. Distance to Nearest Non-Worker Individual: > 10 Feet - 1/4 Mile

13. Residential Population Within 1 Mile: 9530.0

14. Residential Population Within 4 Miles: 160000.0

Water Use Information



15. Local Drinking Water Supply Source:

- No Water Withdrawals Within Target Distance Limits

16. Total Population Served by Local Drinking Water Supply Source: 177855.0

17. Drinking Water Supply System Type for Local Drinking Water Supply Sources:

- Municipal (Services over 25 People)

18. Surface Water Adjacent to/Draining Site:

- Stream
- Wetland

1. Site Name: Landes Company  
(as entered in CERCLIS)
2. Site CERCLIS Number: TND 003328960
3. Site Reviewer: Craig Stannard
4. Date: March 22, 1994
5. Site Location: Chattanooga/Hamilton County, Tennessee  
(City/County,State)
6. Congressional District: 3
7. Site Coordinates: Single



Latitude: 34 59'43.0"                    Longitude: 85 18'30.0"

	Score
Ground Water Migration Pathway Score (Sgw)	0.22
Surface Water Migration Pathway Score (SSW)	43.79
Soil Exposure Pathway Score (Ss)	0.61
Air Migration Pathway Score (Sa)	7.20
Site Score	22.19

NOTE

EPA uses the terms "facility," "site," and "release" interchangeably. The term "facility" is broadly defined in CERCLA to include any area where hazardous substances have "come to be located" (CERCLA Section 109(9)), and the listing process is not intended to define or reflect boundaries of such facilities or releases. Site names, and references to specific parcels or properties, are provided for general identification purposes only. Knowledge regarding the extent of sites will be refined as more information is developed during the RI/FS and even during implementation of the remedy.

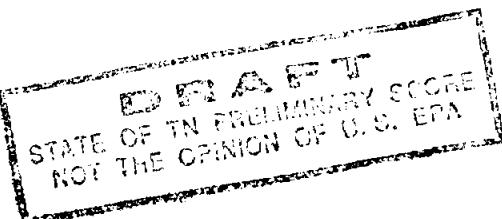
PREScore 2.0 - PREScore.TCL File 05/11/93  
 GROUND WATER MIGRATION PATHWAY SCORESHEET  
 Landes Company - 04/14/94

PAGE: 2

GROUND WATER MIGRATION PATHWAY Factor Categories & Factors	Maximum Value	Value Assigned
Likelihood of Release to an Aquifer Aquifer: Chickamauga Limestone		
1. Observed Release	550	0
2. Potential to Release		
2a. Containment	10	10
2b. Net Precipitation	10	10
2c. Depth to Aquifer	5	5
2d. Travel Time	35	5
2e. Potential to Release [lines 2a(2b+2c+2d)]	500	200
3. Likelihood of Release	550	200
Waste Characteristics		
4. Toxicity/Mobility	*	2.00E+03
5. Hazardous Waste Quantity	*	100
6. Waste Characteristics	100	18
Targets		
7. Nearest Well	50	0.00E+00
8. Population		
8a. Level I Concentrations	**	0.00E+00
8b. Level II Concentrations	**	0.00E+00
8c. Potential Contamination	**	0.00E+00
8d. Population (lines 8a+8b+8c)	**	0.00E+00
9. Resources	5	5.00E+00
10. Wellhead Protection Area	20	0.00E+00
11. Targets (lines 7+8d+9+10)	**	5.00E+00
12. Targets (including overlaying aquifers)	**	5.00E+00
13. Aquifer Score	100	0.22
GROUND WATER MIGRATION PATHWAY SCORE (Sgw)	100	0.22

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.



PREScore 2.0 - PRESCORE.TCL File 05/11/93  
 SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET  
 Landes Company - 04/14/94

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SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors HUMAN FOOD CHAIN THREAT	Maximum Value	Value Assigned
Likelihood of Release		
14. Likelihood of Release (same as line 5)	550	550
Waste Characteristics		
15. Toxicity/Persistence/Bioaccumulation	*	5.00E+08
16. Hazardous Waste Quantity	*	100
17. Waste Characteristics	1000	320
Targets		
18. Food Chain Individual	50	2.00E+01
19. Population		
19a. Level I Concentrations	**	0.00E+00
19b. Level II Concentrations	**	0.00E+00
19c. Pot. Human Food Chain Contamination	**	3.00E-06
19d. Population (lines 19a+19b+19c)	**	3.00E-06
20. Targets (lines 18+19d)	**	2.00E+01
21. HUMAN FOOD CHAIN THREAT SCORE	100	42.67

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.



PREScore 2.0 - PREScore.TCL File 05/11/93  
 SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET  
 Landes Company - 04/14/94

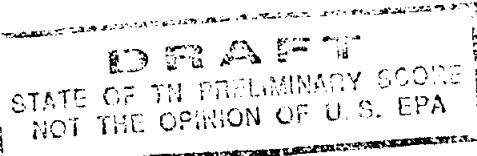
PAGE:

5

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors ENVIRONMENTAL THREAT	Maximum Value	Value Assigned
Likelihood of Release		
22. Likelihood of Release (same as line 5)	550	550
Waste Characteristics		
23. Ecosystem Toxicity/Persistence/Bioacc.	*	5.00E+08
24. Hazardous Waste Quantity	*	100
25. Waste Characteristics	1000	320
Targets		
26. Sensitive Environments		
26a. Level I Concentrations	**	0.00E+00
26b. Level II Concentrations	**	0.00E+00
26c. Potential Contamination	**	2.50E-02
26d. Sensitive Environments (lines 26a+26b+26c)	**	2.50E-02
27. Targets (line 26d)	**	2.50E-02
28. ENVIRONMENTAL THREAT SCORE	60	0.05
29. WATERSHED SCORE	100	43.79
30. SW: OVERLAND/FLOOD COMPONENT SCORE (Sof)	100	43.79

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.



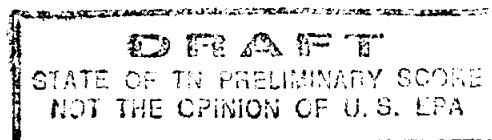
PREScore 2.0 - PREScore.TCL File 05/11/93  
 GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET  
 Landes Company - 04/14/94

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GROUND WATER TO SURFACE WATER MIGRATION COMPONENT	Maximum Value	Value Assigned
Factor Categories & Factors		
DRINKING WATER THREAT		
Likelihood of Release to Aquifer		
Aquifer: Chickamauga Limestone		
1. Observed Release	550	0
2. Potential to Release		
2a. Containment	10	10
2b. Net Precipitation	10	10
2c. Depth to Aquifer	5	5
2d. Travel Time	35	5
2e. Potential to Release [lines 2a(2b+2c+2d)]	500	200
3. Likelihood of Release	550	200
Waste Characteristics		
4. Toxicity/Mobility/Persistence	*	2.00E+03
5. Hazardous Waste Quantity	*	100
6. Waste Characteristics	100	18
Targets		
7. Nearest Intake	50	0.00E+00
8. Population		
8a. Level I Concentrations	**	0.00E+00
8b. Level II Concentrations	**	0.00E+00
8c. Potential Contamination	**	0.00E+00
8d. Population (lines 8a+8b+8c)	**	0.00E+00
9. Resources	5	5.00E+00
10. Targets (lines 7+8d+9)	**	5.00E+00
11. DRINKING WATER THREAT SCORE	100	0.22

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.



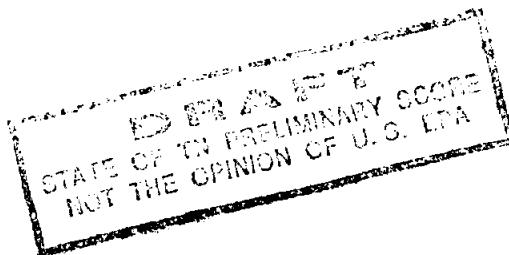
PREScore 2.0 - PRESCORE.TCL File 05/11/93  
 GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET  
 Landes Company - 04/14/94

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GROUND WATER TO SURFACE WATER MIGRATION COMPONENT Factor Categories & Factors HUMAN FOOD CHAIN THREAT	Maximum Value	Value Assigned
<b>Likelihood of Release</b>		
12. Likelihood of Release (same as line 3)	550	200
<b>Waste Characteristics</b>		
13. Toxicity/Mobility/Persistence/Bioacc.	*	1.00E+07
14. Hazardous Waste Quantity	*	100
15. Waste Characteristics	1000	180
<b>Targets</b>		
16. Food Chain Individual	50	0.00E+00
17. Population		
17a. Level I Concentrations	**	0.00E+00
17b. Level II Concentrations	**	0.00E+00
17c. Pot. Human Food Chain Contamination	**	0.00E+00
17d. Population (lines 17a+17b+17c)	**	0.00E+00
18. Targets (lines 16+17d)	**	0.00E+00
<b>19. HUMAN FOOD CHAIN THREAT SCORE</b>	100	0.00

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.



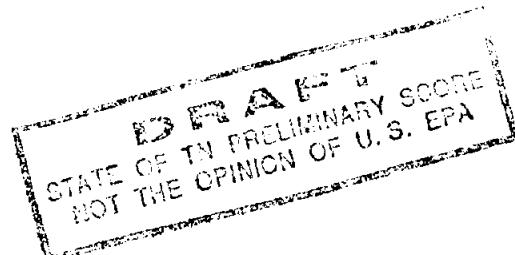
PREScore 2.0 - PREScore.TCL File 05/11/93  
 GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET  
 Landes Company - 04/14/94

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GROUND WATER TO SURFACE WATER MIGRATION COMPONENT Factor Categories & Factors ENVIRONMENTAL THREAT	Maximum Value	Value Assigned
Likelihood of Release		
20. Likelihood of Release (same as line 3)	550	200
Waste Characteristics		
21. Ecosystem Tox./Mobility/Persist./Bioacc.	*	5.00E+07
22. Hazardous Waste Quantity	*	100
23. Waste Characteristics	1000	180
Targets		
24. Sensitive Environments		
24a. Level I Concentrations	**	0.00E+00
24b. Level II Concentrations	**	0.00E+00
24c. Potential Contamination	**	0.00E+00
24d. Sensitive Environments (lines 24a+24b+24c)	**	0.00E+00
25. Targets (line 24d)	**	0.00E+00
26. ENVIRONMENTAL THREAT SCORE	60	0.00
27. WATERSHED SCORE	100	0.22
28. SW: GW to SW COMPONENT SCORE (Sgs)	100	0.22

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.



SOIL EXPOSURE PATHWAY Factor Categories & Factors RESIDENT POPULATION THREAT	Maximum Value	Value Assigned
Likelihood of Exposure		
1. Likelihood of Exposure	550	550
Waste Characteristics		
2. Toxicity	*	1.00E+04
3. Hazardous Waste Quantity	*	10
4. Waste Characteristics	100	18
Targets		
5. Resident Individual	50	0.00E+00
6. Resident Population		
6a. Level I Concentrations	**	0.00E+00
6b. Level II Concentrations	**	0.00E+00
6c. Resident Population (lines 6a+6b)	**	0.00E+00
7. Workers	15	5.00E+00
8. Resources	5	0.00E+00
9. Terrestrial Sensitive Environments	***	0.00E+00
10. Targets (lines 5+6c+7+8+9)	**	5.00E+00
11. RESIDENT POPULATION THREAT SCORE	**	4.95E+04

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.

\*\*\* No specific maximum value applies, see HRS for details.



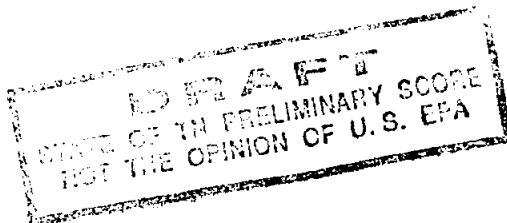
PREScore 2.0 - PRESCORE.TCL File 05/11/93  
 SOIL EXPOSURE PATHWAY SCORESHEET  
 Landes Company - 04/14/94

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SOIL EXPOSURE PATHWAY Factor Categories & Factors NEARBY POPULATION THREAT	Maximum Value	Value Assigned
<b>Likelihood of Exposure</b>		
12. Attractiveness/Accessibility	100	1.00E+01
13. Area of Contamination	100	2.00E+01
14. Likelihood of Exposure	500	5.00E+00
<b>Waste Characteristics</b>		
15. Toxicity	*	1.00E+04
16. Hazardous Waste Quantity	*	10
17. Waste Characteristics	100	18
<b>Targets</b>		
18. Nearby Individual	1	1.00E+00
19. Population Within 1 Mile	**	7.00E+00
20. Targets (lines 18+19)	**	8.00E+00
<b>21. NEARBY POPULATION THREAT SCORE</b>	**	7.20E+02
<b>SOIL EXPOSURE PATHWAY SCORE (Ss)</b>	100	0.61

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.



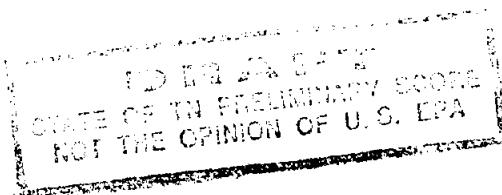
AIR PATHWAY SCORESHEET  
Landes Company - 04/14/94

AIR MIGRATION PATHWAY Factor Categories & Factors	Maximum Value	Value Assigned
<b>Likelihood of Release</b>		
1. Observed Release	550	0
2. Potential to Release		
2a. Gas Potential to Release	500	280
2b. Particulate Potential to Release	500	340
2c. Potential to Release	500	340
3. Likelihood of Release	550	340
<b>Waste Characteristics</b>		
4. Toxicity/Mobility	*	2.00E+03
5. Hazardous Waste Quantity	*	100
6. Waste Characteristics	100	18
<b>Targets</b>		
7. Nearest Individual	50	2.00E+01
8. Population		
8a. Level I Concentrations	**	0.00E+00
8b. Level II Concentrations	**	0.00E+00
8c. Potential Contamination	**	7.70E+01
8d. Population (lines 8a+8b+8c)	**	7.70E+01
9. Resources	5	0.00E+00
10. Sensitive Environments		
10a. Actual Contamination	***	0.00E+00
10b. Potential Contamination	***	0.00E+00
10c. Sens. Environments(lines 10a+10b)	***	0.00E+00
11. Targets (lines 7+8d+9+10c)	**	9.70E+01
<b>AIR MIGRATION PATHWAY SCORE (Sa)</b>	100	7.20E+00

\* Maximum value applies to waste characteristics category.

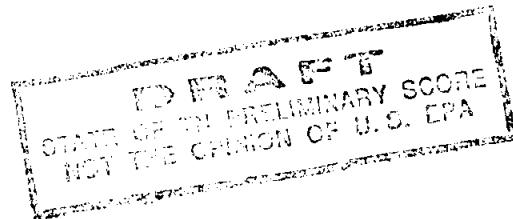
\*\* Maximum value not applicable.

\*\*\* No specific maximum value applies, see HRS for details.



1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: contaminated soil

a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00



2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID	contaminated soil		
b. Source Type	Contaminated Soil		
c. Secondary Source Type	N.A.		
d. Source Vol.(yd3/gal)  Source Area (ft2)	0.00		15000.00
e. Source Volume/Area Value	4.41E-01		
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)	0.00E+00		
g. Data Complete?	NO		
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)	0.00E+00		
i. Data Complete?	NO		
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)	4.41E-01		

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Acenaphthene	< 2	NO	0.0E+00	ppm
Arsenic	< 2	NO	6.3E+01	ppm
Benzo(g,h,i)perylene	< 2	NO	1.3E+01	ppm
Benzo(j,k)fluorene	< 2	NO	3.3E+01	ppm
Benzo(k)fluoranthene	< 2	NO	7.9E+03	ppm
Benzofluoranthene, 3,4-	< 2	NO	3.7E+04	ppm
Bis (2-ethylhexyl) phthalate	< 2	NO	1.0E+05	ppm
Cadmium	< 2	NO	1.2E+01	ppm
Chloro-3-methylphenol, 4-	< 2	NO	0.0E+00	ppm
Chromium	< 2	NO	1.6E+02	ppm
Chrysene	< 2	NO	2.9E+04	ppm
Cobalt	< 2	NO	3.1E+01	ppm
Copper	< 2	NO	2.9E+02	ppm
Cyanide	< 2	NO	4.6E+02	ppm
Dibenz(a,h)anthracene	< 2	NO	8.8E+03	ppm
Dieldrin	< 2	NO	0.0E+00	ppm
Fluorene	< 2	NO	0.0E+00	ppm
Heptachlor	< 2	NO	0.0E+00	ppm
Hexachlorobenzene	< 2	NO	0.0E+00	ppm
Hexachlorocyclohexane, alpha-	< 2	NO	3.0E+02	ppm
Hexachlorocyclohexane, beta-	< 2	NO	5.4E+02	ppm

WASTE QUANTITY  
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Hexachlorocyclohexane, delta-	< 2	NO	0.0E+00	ppm
Indeno(1,2,3-CD)pyrene	< 2	NO	1.9E+04	ppm
Iron	< 2	NO	4.0E+05	ppm
Lead	< 2	NO	4.0E+02	ppm
Lindane	< 2	NO	1.0E+02	ppm
Manganese	< 2	NO	4.9E+03	ppm
Mercury	< 2	NO	9.3E-01	ppm
Naphthalene	< 2	NO	0.0E+00	ppm
Nickel	< 2	NO	1.8E+02	ppm
Phenanthrene	< 2	NO	1.1E+04	ppm
Phenol	< 2	NO	0.0E+00	ppm
Pyrene	< 2	NO	3.2E+04	ppm
Sodium	< 2	NO	2.8E+03	ppm
Toluene	< 2	NO	0.0E+00	ppm
Trichlorophenol, 2,4,6-	< 2	NO	0.0E+00	ppm
Zinc	< 2	NO	5.6E+02	ppm

## Documentation for Source Type:

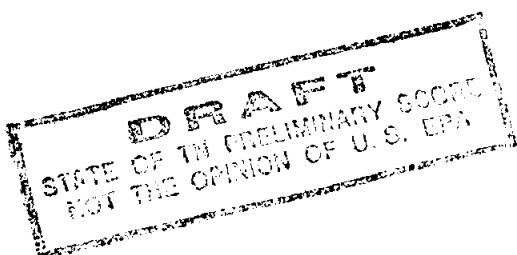
The source type is based on analytical data for soil samples collected at the site on February 7th and 8th, 1994.

Reference: 52

## Documentation for Source Hazardous Substances:

The hazardous substances attributed to the soil samples are identified in the SI analytical data for the Landes Company site. The times and locations of soil sample collection are as documented in the appropriate references as are background levels.

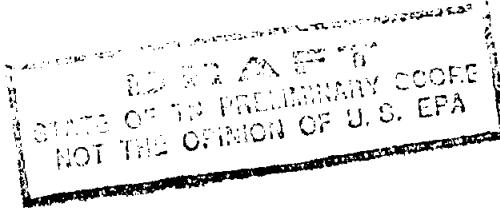
Reference: 50,51,52



Documentation for Source Area:

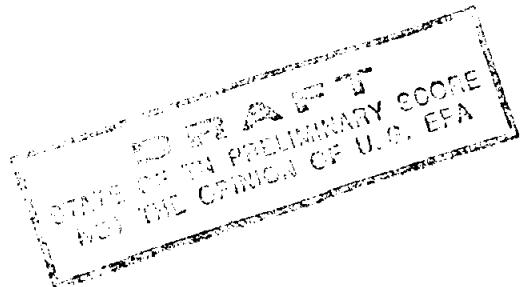
The area of the contaminated soil source is an estimate based on the approximate distances between soil samples LC-SS-02, LC-SS-04, LC-SS-05, and LC-SS-06. The estimated distance between LC-SS-02 and LC-SS-04 is approximately 150 feet. The estimated distance between LC-SS-04 and LC-SS-05 is approximately 200 feet. The estimated distance between LC-SS-02 and LC-SS-05 is approximately 200 feet. This roughly equates to a triangular area of approximately 15,000 square feet.

Reference: 50,51,52



1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: waste piles

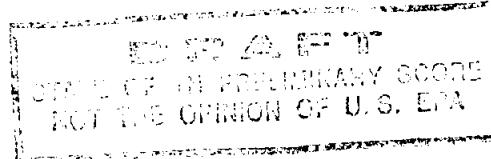
a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00



2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID	waste piles
b. Source Type	Waste Pile
c. Secondary Source Type	N.A.
d. Source Vol.(yd3/gal)   Source Area (ft2)	1030.00   0.00
e. Source Volume/Area Value	4.12E+02
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)	0.00E+00
g. Data Complete?	NO
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)	0.00E+00
i. Data Complete?	NO
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)	4.12E+02

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Acenaphthene	< 2	NO	0.0E+00	ppm
Acenaphthylene	< 2	NO	1.1E+04	ppm
Aluminum	< 2	NO	1.9E+05	ppm
Anthracene	< 2	NO	1.6E+04	ppm
Arsenic	< 2	NO	2.8E+01	ppm
Barium	< 2	NO	2.0E+02	ppm
Benz(a)anthracene	< 2	NO	4.4E+04	ppm
Benzo(a)pyrene	< 2	NO	4.1E+04	ppm
Benzo(g,h,i)perylene	< 2	NO	2.7E+04	ppm
Benzofluoranthene, 3,4-	< 2	NO	9.4E+04	ppm
Bis (2-ethylhexyl) phthalate	< 2	NO	3.2E+04	ppm
Cadmium	< 2	NO	4.2E+01	ppm
Chromium	< 2	NO	1.9E+02	ppm
Chrysene	< 2	NO	5.1E+04	ppm
Cobalt	< 2	NO	3.2E+01	ppm
Copper	< 2	NO	1.3E+04	ppm
Cyanide	< 2	NO	2.5E+03	ppm
Di-n-butyl phthalate	< 2	NO	0.0E+00	ppm
Dibenz(a,h)anthracene	< 2	NO	1.1E+04	ppm
Diethyl phthalate	< 2	NO	0.0E+00	ppm
Fluorene	< 2	NO	0.0E+00	ppm



## WASTE QUANTITY

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Hexachlorobenzene	< 2	NO	1.1E+02	ppm
Hexachlorocyclohexane, alpha-	< 2	NO	1.7E+03	ppm
Hexachlorocyclohexane, beta-	< 2	NO	1.6E+03	ppm
Hexachlorocyclohexane, delta-	< 2	NO	2.9E+02	ppm
Indeno(1,2,3-CD)pyrene	< 2	NO	3.0E+04	ppm
Iron	< 2	NO	5.3E+04	ppm
Lead	< 2	NO	4.2E+03	ppm
Lindane	< 2	NO	2.9E+02	ppm
Magnesium	< 2	NO	4.2E+03	ppm
Manganese	< 2	NO	1.4E+03	ppm
Mercury	< 2	NO	8.9E-01	ppm
Naphthalene	< 2	NO	8.4E+03	ppm
Nickel	< 2	NO	7.1E+02	ppm
Phenanthrene	< 2	NO	2.6E+04	ppm
Pyrene	< 2	NO	7.8E+04	ppm
Selenium	< 2	NO	3.1E+00	ppm
Silver	< 2	NO	2.8E+01	ppm
Sodium	< 2	NO	2.2E+02	ppm
Zinc	< 2	NO	1.4E+04	ppm

## Documentation for Source Type:

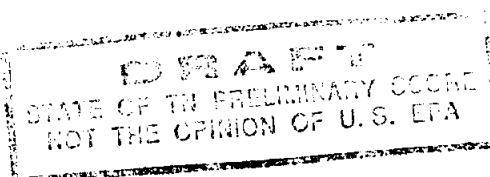
The source type was identified as a waste pile based on site reconnaissance and analytical data from SI sampling activities.

Reference: 27-29,52

## Documentation for Source Hazardous Substances:

The substances attributed to the waste pile source were identified by analysis of waste pile samples collected during SI sampling activities on February 7th and 8th, 1994.

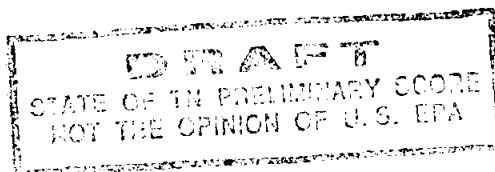
Reference: 52



Documentation for Source Volume:

The waste pile volume consists of several separate adjacent piles; one that is approximately 12 feet high, 30 feet wide, and 150 feet long and several others that, when combined, occupy a volume approximately 20 feet by 20 feet by 2 feet thick. This equates to approximately 27,800 cubic feet or 1,030 cubic yards.

Reference: 21,22,27-29,52



WASTE QUANTITY  
Landes Company - 04/14/94

## 3. SITE HAZARDOUS WASTE QUANTITY SUMMARY

No.	Source ID	Migration Pathways	Vol. or Area Value (2e)	Constituent or Wastestream Value (2f,2h)	Hazardous Waste Qty. Value (2k)
1	contaminated soil	GW-SW-SE-A	4.41E-01	0.00E+00	4.41E-01
2	waste piles	GW-SW-SE-A	4.12E+02	0.00E+00	4.12E+02



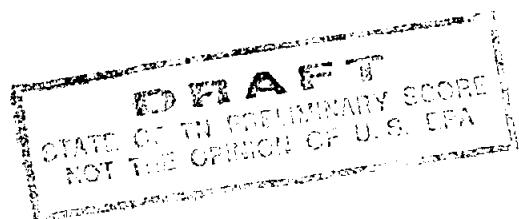
4. PATHWAY HAZARDOUS WASTE QUANTITY AND WASTE CHARACTERISTICS SUMMARY TABLE

Migration Pathway	Contaminant Values	HWQVs*	WCVs**
Ground Water	Toxicity/Mobility 2.00E+03	100	18
SW: Overland Flow, DW	Tox./Persistence 1.00E+04	100	32
SW: Overland Flow, HFC	Tox./Persis./Bioacc. 5.00E+08	100	320
SW: Overland Flow, Env	Etox./Persis./Bioacc. 5.00E+08	100	320
SW: GW to SW, DW	Tox./Persistence 2.00E+03	100	18
SW: GW to SW, HFC	Tox./Persis./Bioacc. 1.00E+07	100	180
SW: GW to SW, Env	Etox./Persis./Bioacc. 5.00E+07	100	180
Soil Exposure: Resident	Toxicity 1.00E+04	10	18
Soil Exposure: Nearby	Toxicity 1.00E+04	10	18
Air	Toxicity/Mobility 2.00E+03	100	18

\* Hazardous Waste Quantity Factor Values

\*\* Waste Characteristics Factor Category Values

Note: SW = Surface Water  
GW = Ground Water  
DW = Drinking Water Threat  
HFC = Human Food Chain Threat  
Env = Environmental Threat



No. Aquifer ID	Type	Overlaying No.	Inter-connected with	Likelihood of Release	Targets
1 Chickamauga Limeston Karst		0	0	200	5.00E+00

Containment

No. Source ID	HWQ Value	Containment Value
1 contaminated soil	4.41E-01	10
2 waste piles	4.12E+02	10

Containment Factor 10

Documentation for Ground Water Containment, Source contaminated soil:

The contaminated soil source has no maintained engineered cover and no functioning and maintained run-on control system and runoff management system.

Reference: 27-29,50-52,55

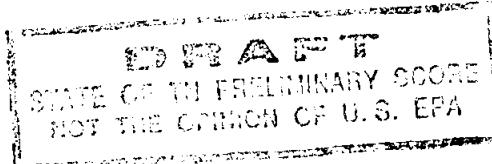
Documentation for Ground Water Containment, Source waste piles:

The waste pile source at the southeastern corner of the site has no maintained engineered cover and no functioning and maintained run-on control system and runoff management system.

Reference: 27-29,55

Net Precipitation

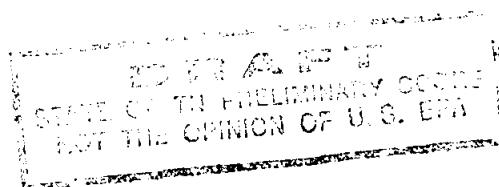
Net Precipitation (inches) N.A.



Documentation for Net Precipitation:

HRS Figure 3-2 was used to determine the net precipitation factor value.

Reference: 47,55



Aquifer: Chickamauga Limestone

Type of Aquifer: Karst

Overlaying Aquifer: 0

Interconnected with: 0

Documentation for Chickamauga Limestone Aquifer:

The bedrock underlying the site is the Chickamauga Limestone. It occurs at a depth of from 12 to 24 feet. The Chickamauga limestone is a karst unit that has no confining layers. It reaches a thickness of from 1,000 to 1,500 feet and is the aquifer of concern. Groundwater occurs along joints, fractures, and bedding planes that have been enlarged through chemical weathering.

Reference: 2,4,49

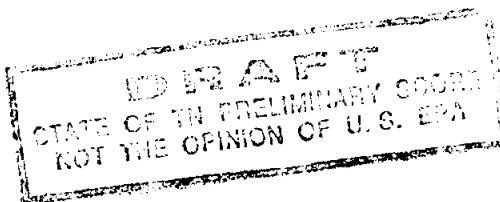
OBSERVED RELEASE

No.	Well ID	Well Type	Distance (miles)	Level of Contamination
-	N/A and/or data not specified			

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Observed Release Factor	0
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POTENTIAL TO RELEASE

Containment

CONTAMINANT RELEASE PATHWAY ASSESSMENT  
RELEASED TO GROUNDWATER  
NOT THE OPINION OF U.S. EPA

Containment Factor	10
<hr/>	
Net Precipitation Factor	10
<hr/>	
A. Depth of Hazardous Substances	0.25 feet

Documentation for Depth of Hazardous Substances:

The lowest known point of contamination is an estimate based on visual observation at the time of soil contamination.

Reference: 50-52

B. Depth to Aquifer from Surface	12.00	feet
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Documentation for Depth to Aquifer from Surface :

The geological interval from the surface to the top of the Chickamauga Limestone aquifer consists of fill material and native residual clay soils. The fill varies from 2 to 10 feet in thickness and consists of brown and gray, silty to sandy clay containing crushed stone, gravel, and rock fragments. The fill material is moderately permeable. The residual clay underlying the fill is reddish brown, silty, and contains chert fragments. It is relatively impermeable.

Reference: 49

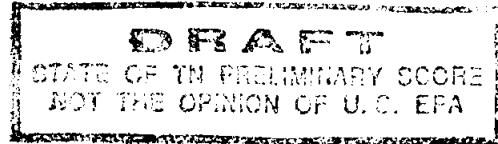
C. Depth to Aquifer (B - A) 11.75 feet

Depth to Aquifer Factor 5

Travel Time

Are All Layers Karst? NO

Documentation for Karst Layers:



The absence of karst layers in the interval between the site contaminated soils and sediments and the aquifer of concern is documented by past drilling activity at the site.

Reference: 49

Thickness of Layer(s) with Lowest Conductivity 10.00 feet

Documentation for Thickness of Layers with Lowest Conductivity:

The thickness of the layer with the lowest hydraulic conductivity (i.e., native clays) at the site is an estimate based on the Tri-State Phase 2 drilling logs. The hydrologic conductivity of this layer is based on information in the Phase 2 report as well as on HRS Table 3-6.

Reference: 49,55

Hydraulic Conductivity (cm/sec) 1.0E-08

Documentation for Hydraulic Conductivity:

The hydraulic conductivity of the intervening layers is based on the Tri State Phase 2 drilling and HRS Table 3-6.

Reference: 49,55

Travel Time Factor

5

=====  
Potential to Release Factor 200

STATE OF TN PRELIMINARY OPINION  
NOT THE OPINION OF U.S. EPA

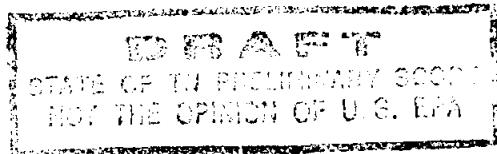
PREscore 2.0 - PRESCORE.TCL File 05/11/93  
 GROUND WATER PATHWAY WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

PAGE: 28

Source: 1 contaminated soil

Source Hazardous Waste Quantity Value: 0.44

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/Mobility Value
Acenaphthene	10	2.00E-03	2.00E-02
Arsenic	10000	1.00E-02	1.00E+02
Benzo(g,h,i)perylene	100	2.00E-09	2.00E-07
Benzo(j,k)fluorene	100	2.00E-07	2.00E-05
Benzo(k)fluoranthene	100	2.00E-09	2.00E-07
Benzofluoranthene, 3,4-	10000	2.00E-09	2.00E-05
Bis (2-ethylhexyl) phthalate	100	2.00E-07	2.00E-05
Cadmium	10000	2.00E-01	2.00E+03
Chloro-3-methylphenol, 4-	1	1.00E-02	1.00E-02
Chromium	10000	1.00E-02	1.00E+02
Chrysene	100	2.00E-09	2.00E-07
Cobalt	1	1.00E-02	1.00E-02
Copper	100	1.00E-02	1.00E+00
Cyanide	100	2.00E-05	2.00E-03
Dibenz(a,h)anthracene	10000	2.00E-09	2.00E-05
Dieldrin	10000	2.00E-07	2.00E-03
Fluorene	100	2.00E-03	2.00E-01
Heptachlor	1000	2.00E-05	2.00E-02
Hexachlorobenzene	1000	2.00E-07	2.00E-04
Hexachlorocyclohexane, alpha-	10000	2.00E-03	2.00E+01
Hexachlorocyclohexane, beta-	100	2.00E-05	2.00E-03
Hexachlorocyclohexane, delta-	1	2.00E-03	2.00E-03
Indeno(1,2,3-CD)pyrene	100	2.00E-09	2.00E-07
Iron	100	1.00E-02	1.00E+00
Lead	10000	2.00E-05	2.00E-01
Lindane	10000	2.00E-05	2.00E-01
Manganese	10000	1.00E-02	1.00E+02
Mercury	10000	2.00E-05	2.00E-01
Naphthalene	100	2.00E-03	2.00E-01
Nickel	10000	2.00E-05	2.00E-01
Phenanthrene	100	2.00E-05	2.00E-03
Phenol	1	1.00E+00	1.00E+00
Pyrene	100	2.00E-09	2.00E-07
Sodium	100	1.00E-02	1.00E+00
Toluene	10	1.00E-02	1.00E-01
Trichlorophenol, 2,4,6-	10	1.00E+00	1.00E+01
Zinc	10	2.00E-03	2.00E-02

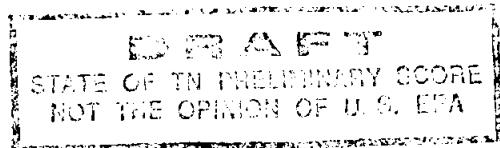


PREScore 2.0 - PRESCORE.TCL File 05/11/93  
 GROUND WATER PATHWAY WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

PAGE: 29

Source: 2 waste piles

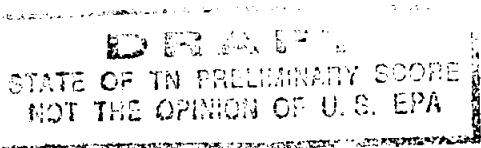
Source Hazardous Waste Quantity Value: 412.00



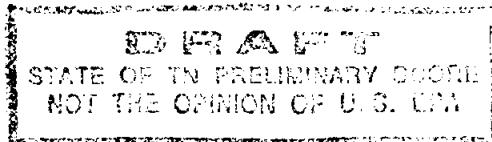
Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/Mobility Value
Acenaphthene	10	2.00E-03	2.00E-02
Acenaphthylene	100	2.00E-03	2.00E-01
Aluminum	100	2.00E-05	2.00E-03
Anthracene	10	2.00E-07	2.00E-06
Arsenic	10000	1.00E-02	1.00E+02
Barium	10	1.00E-02	1.00E-01
Benz(a)anthracene	1000	2.00E-09	2.00E-06
Benzo(a)pyrene	10000	2.00E-09	2.00E-05
Benzo(g,h,i)perylene	100	2.00E-09	2.00E-07
Benzofluoranthene, 3,4-	10000	2.00E-09	2.00E-05
Bis (2-ethylhexyl) phthalate	100	2.00E-07	2.00E-05
Cadmium	10000	2.00E-01	2.00E+03
Chromium	10000	1.00E-02	1.00E+02
Chrysene	100	2.00E-09	2.00E-07
Cobalt	1	1.00E-02	1.00E-02
Copper	100	1.00E-02	1.00E+00
Cyanide	100	2.00E-05	2.00E-03
Di-n-butyl phthalate	10	2.00E-03	2.00E-02
Dibenz(a,h)anthracene	10000	2.00E-09	2.00E-05
Diethyl phthalate	1	1.00E-02	1.00E-02
Fluorene	100	2.00E-03	2.00E-01
Hexachlorobenzene	1000	2.00E-07	2.00E-04
Hexachlorocyclohexane, alpha-	10000	2.00E-03	2.00E+01
Hexachlorocyclohexane, beta-	100	2.00E-05	2.00E-03
Hexachlorocyclohexane, delta-	1	2.00E-03	2.00E-03
Indeno(1,2,3-CD)pyrene	100	2.00E-09	2.00E-07
Iron	100	1.00E-02	1.00E+00
Lead	10000	2.00E-05	2.00E-01
Lindane	10000	2.00E-05	2.00E-01
Magnesium	100	2.00E-05	2.00E-03
Manganese	10000	1.00E-02	1.00E+02
Mercury	10000	2.00E-05	2.00E-01
Naphthalene	100	2.00E-03	2.00E-01
Nickel	10000	2.00E-05	2.00E-01
Phenanthrene	100	2.00E-05	2.00E-03
Pyrene	100	2.00E-09	2.00E-07
Selenium	100	1.00E-02	1.00E+00
Silver	100	2.00E-07	2.00E-05
Sodium	100	1.00E-02	1.00E+00
Zinc	10	2.00E-03	2.00E-02

Hazardous Substances Found in an Observed Release

Well No.	Observed Release Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
-----				
- N/A and/or data not specified				



Toxicity/Mobility Value from Source Hazardous Substances: 2.00E+03  
Toxicity/Mobility Value from Observed Release Hazardous Substances: 0.00E+00  
Toxicity/Mobility Factor: 2.00E+03  
Sum of Source Hazardous Waste Quantity Values: 4.12E+02  
Hazardous Waste Quantity Factor: 100  
Waste Characteristics Factor Category: 18

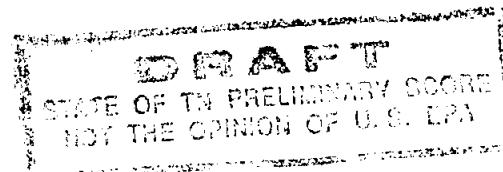


Population by Well

No.	Well ID	Sample Type	Distance (miles)	Level of Contamination Population
- N/A and/or data not specified				

Level I Population Factor: 0.00

Level II Population Factor: 0.00



Potential Contamination by Distance Category

---

Distance Category

(miles)

Population

Value

> 0 to 1/4	0.0	0.00E+00
> 1/4 to 1/2	0.0	0.00E+00
> 1/2 to 1	0.0	0.00E+00
> 1 to 2	0.0	0.00E+00
> 2 to 3	0.0	0.00E+00
> 3 to 4	0.0	0.00E+00

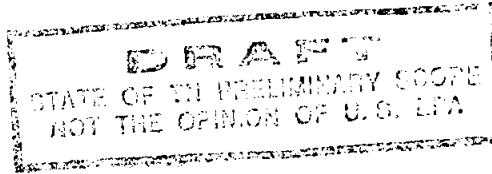
Potential Contamination Factor: 0.000

Nearest Well

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Level of Contamination: N.A.

Nearest Well Factor: 0.00E+00



Documentation for Nearest Well:

There are no known drinking water wells within the 4-mile site radius. The only wells known to exist are either monitoring wells or industrial wells.

Reference: 16,19,30

Resources

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Resource Use: YES

Resource Factor: 5.00E+00

Documentation for Resources:

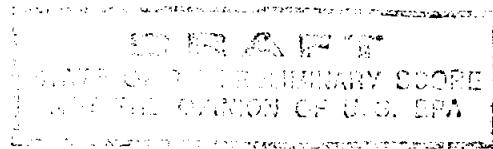
Groundwater is used in industrial processes within the 4-mile site radius.

Reference: 16

Wellhead Protection Area

No wellhead protection area

Wellhead Protection Area Factor: 0.00E+00



Documentation for Wellhead Protection Area:

There are no wellhead protection areas within the 4-mile site radius.

Reference: 30

PREscore 2.0 - PRESCORE.TCL File 05/11/93  
SURFACE WATER PATHWAY SEGMENT SUMMARY  
Landes Company - 04/14/94

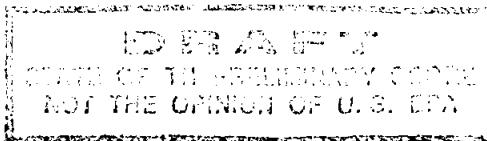
PAGE: 35

No.	Segment ID	Segment Type	Water Type	Start Point (mi)	End Point (mi)	Average Flow (cfs)
1	Chattanooga Creek	River	Fresh	0.00	5.25	125
2	Tennessee River	River	Fresh	5.25	15.00	36650

Documentation for segment: Chattanooga Creek:

A small stream flows across the site and, after 1/4 of a mile, it enters Chattanooga Creek. Chattanooga Creek flows north for approximately 5 miles and enters the Tennessee River. The flow rate for Chattanooga Creek is an estimate based on reference data.

Reference: 26,29,47



Documentation for segment: Tennessee River:

The Tennessee River starts at segment mile 5.25 and continues downstream for the remaining 9.75 miles of the Landes Company downstream segment. The flow rate is based on reference material.

Reference: 24,47

PREScore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 36  
SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE  
Landes Company - 04/14/94

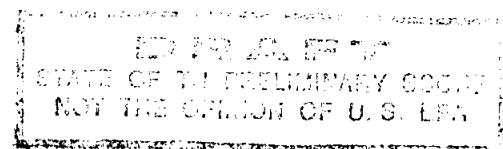
OBSERVED RELEASE

No.	Sample ID	Sample Type	Distance (miles)	Level of Contamination	DW	HFC	Env
1	LC-SD-05	Sediment	0.001	Level II	Level II	Level II	
Sample Hazardous Substance No.			Concent.	Units			
1	Bis (2-ethylhexyl) phthalate	2.7E+06	ppb				
1	Hexachlorocyclohexane, beta-	9.8E+03	ppb				
1	Hexachlorocyclohexane, delta-	1.6E+03	ppb				
=====							
		Observed Release Factor	550				

Documentation for Observed Release, Sample LC-SD-05:

Sediment sample LC-SD-05 was collected in the small receiving stream at the eastern end of the site at 2:00 PM on 2/7/94. The 9.8 ppm Beta BHC and the 1.6 ppm Delta BHC concentrations detected in LC-SD-05 are both more than 3 times the concentrations of these substances found in background samples LC-SD-01 and LC-SD-04.

Reference: 50,51,52



POTENTIAL TO RELEASE

Potential to Release by Overland Flow

Containment

No.	Source ID	HWQ Value	Containment Value
1	contaminated soil	4.41E-01	10
2	waste piles	4.12E+02	10

Containment Factor: 10

Documentation for Overland Flow Containment, Source contaminated soil:

The contaminated soil at the southeastern corner of the site has no maintained engineered cover and no functioning and maintained run-on control and runoff management system.

Reference: 27-29,55

DO NOT USE THIS  
SOURCE OF THE PRELIMINARY SCORE  
FOR THE CRITERIA OF U.S. EPA

Documentation for Overland Flow Containment, Source waste piles:

The waste pile source has no maintained engineered cover and no functioning and maintained run-on control system and runoff management system.

Reference: 27-29,55

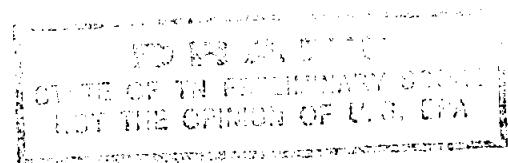
Distance to Surface Water

-----  
Distance to Surface Water: 0.1 feet  
Distance to Surface Water Factor: 25

Documentation for Distance to Surface Water:

The distance to surface water is based on visual observations and the SI sampling data.

Reference: 50-52



Runoff

-----  
A. Drainage Area: 100.0 acres

Documentation for Drainage Area:

The drainage area for the site is an estimate based on the site topographic map.

Reference: 47

B. 2-year, 24-hour Rainfall: 3.5 inches

Documentation for Rainfall:

The 2-year, 24-hour rainfall was estimated using the 1-year, 24-hour rainfall which is 3.1 inches.

Reference: 40

C. Soil Group: D  
Fine-textured soils with very low infiltration rates

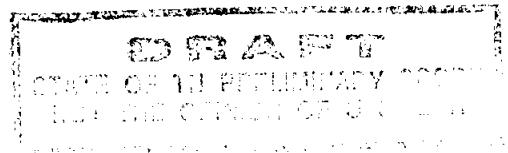
Documentation for Soil Group:

The soil group classification is based on visual observations made during SI sampling.

Reference: 49,50-52

Runoff Factor: 4

Potential to Release by Overland Flow Factor: 290



Potential to Release by Flood

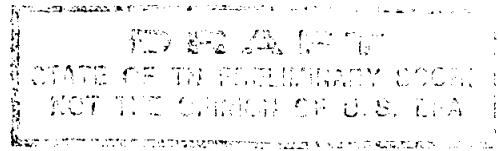
No.	Source ID	HWQ Value	Flood Containment Value	Flood Frequency Value	Potential to Release by Flood
1	contaminated soil	4.41E-01	10	25	250
2	waste piles	4.12E+02	10	25	250

=====  
Potential to Release by Flood Factor: 250

Documentation for Flood Containment, Source contaminated soil:

The contaminated soil source is not contained for any flood.

Reference: 27-29



Documentation for Flood Frequency, Source contaminated soil:

The contaminated soil source is within the 100 year floodzone of Chattanooga Creek.

Reference: 3,27-29

Documentation for Flood Containment, Source waste piles:

The waste pile source is not contained for any flood.

Reference: 27-29

PREscore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 41  
SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE  
Landes Company - 04/14/94

Documentation for Flood Frequency, Source waste piles:

The waste pile source is within the 100 year floodzone of Chattanooga Creek.

Reference: 3,27-29

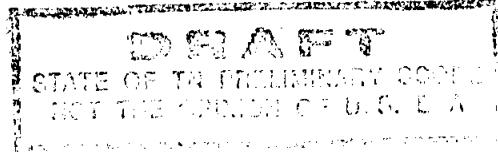
DO NOT USE THIS AS A PRELIMINARY SCORE  
STATE OF TN PRELIMINARY SCORE  
NOT THE OPINION OF U.S. EPA  
USE PRELIMINARY SCORES WITH CAUTION

PREScore 2.0 - PREScore.TCL File 05/11/93 PAGE: 42  
 SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

Source: 1 contaminated soil

Source Hazardous Waste Quantity Value: 0.44

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/Persistence Value
Acenaphthene	10	4.00E-01	4.00E+00
Arsenic	10000	1.00E+00	1.00E+04
Benzo(g,h,i)perylene	0	1.00E+00	0.00E+00
Benzo(j,k)fluorene	100	1.00E+00	1.00E+02
Benzo(k)fluoranthene	0	1.00E+00	0.00E+00
Benzofluoranthene, 3,4-	10000	1.00E+00	1.00E+04
Bis (2-ethylhexyl) phthalate	100	1.00E+00	1.00E+02
Cadmium	10000	1.00E+00	1.00E+04
Chloro-3-methylphenol, 4-	1	1.00E+00	1.00E+00
Chromium	10000	1.00E+00	1.00E+04
Chrysene	0	1.00E+00	0.00E+00
Cobalt	1	1.00E+00	1.00E+00
Copper	0	1.00E+00	0.00E+00
Cyanide	100	4.00E-01	4.00E+01
Dibenz(a,h)anthracene	10000	1.00E+00	1.00E+04
Dieldrin	10000	1.00E+00	1.00E+04
Fluorene	100	1.00E+00	1.00E+02
Heptachlor	1000	1.00E+00	1.00E+03
Hexachlorobenzene	1000	1.00E+00	1.00E+03
Hexachlorocyclohexane, alpha-	10000	1.00E+00	1.00E+04
Hexachlorocyclohexane, beta-	100	1.00E+00	1.00E+02
Hexachlorocyclohexane, delta-	1	1.00E+00	1.00E+00
Indeno(1,2,3-CD)pyrene	0	1.00E+00	0.00E+00
Iron	0	1.00E+00	0.00E+00
Lead	10000	1.00E+00	1.00E+04
Lindane	10000	1.00E+00	1.00E+04
Manganese	10000	1.00E+00	1.00E+04
Mercury	10000	1.00E+00	1.00E+04
Naphthalene	100	4.00E-01	4.00E+01
Nickel	10000	1.00E+00	1.00E+04
Phenanthrene	0	4.00E-01	0.00E+00
Phenol	1	1.00E+00	1.00E+00
Pyrene	100	1.00E+00	1.00E+02
Sodium	0	1.00E+00	0.00E+00
Toluene	10	4.00E-01	4.00E+00
Trichlorophenol, 2,4,6-	10	1.00E+00	1.00E+01
Zinc	10	1.00E+00	1.00E+01



PREscore 2.0 - PRESCORE.TCL File 05/11/93      PAGE: 43  
 SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

Source: 2 waste piles

Source Hazardous Waste Quantity Value: 412.00

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/Persistence Value
Acenaphthene	10	4.00E-01	4.00E+00
Acenaphthylene	0	1.00E+00	0.00E+00
Aluminum	0	1.00E+00	0.00E+00
Anthracene	10	4.00E-01	4.00E+00
Arsenic	10000	1.00E+00	1.00E+04
Barium	10	1.00E+00	1.00E+01
Benz(a)anthracene	1000	1.00E+00	1.00E+03
Benzo(a)pyrene	10000	1.00E+00	1.00E+04
Benzo(g,h,i)perylene	0	1.00E+00	0.00E+00
Benzofluoranthene, 3,4-	10000	1.00E+00	1.00E+04
Bis (2-ethylhexyl) phthalate	100	1.00E+00	1.00E+02
Cadmium	10000	1.00E+00	1.00E+04
Chromium	10000	1.00E+00	1.00E+04
Chrysene	0	1.00E+00	0.00E+00
Cobalt	1	1.00E+00	1.00E+00
Copper	0	1.00E+00	0.00E+00
Cyanide	100	4.00E-01	4.00E+01
Di-n-butyl phthalate	10	1.00E+00	1.00E+01
Dibenz(a,h)anthracene	10000	1.00E+00	1.00E+04
Diethyl phthalate	1	1.00E+00	1.00E+00
Fluorene	100	1.00E+00	1.00E+02
Hexachlorobenzene	1000	1.00E+00	1.00E+03
Hexachlorocyclohexane, alpha-	10000	1.00E+00	1.00E+04
Hexachlorocyclohexane, beta-	100	1.00E+00	1.00E+02
Hexachlorocyclohexane, delta-	1	1.00E+00	1.00E+00
Indeno(1,2,3-CD)pyrene	0	1.00E+00	0.00E+00
Iron	0	1.00E+00	0.00E+00
Lead	10000	1.00E+00	1.00E+04
Lindane	10000	1.00E+00	1.00E+04
Magnesium	0	1.00E+00	0.00E+00
Manganese	10000	1.00E+00	1.00E+04
Mercury	10000	1.00E+00	1.00E+04
Naphthalene	100	4.00E-01	4.00E+01
Nickel	10000	1.00E+00	1.00E+04
Phenanthrene	0	4.00E-01	0.00E+00
Pyrene	100	1.00E+00	1.00E+02
Selenium	100	1.00E+00	1.00E+02
Silver	100	1.00E+00	1.00E+02
Sodium	0	1.00E+00	0.00E+00
Zinc	10	1.00E+00	1.00E+01

ED 52 A FT 3  
 STATE OF TN PRELIMINARY SCORE  
 NOT THE OPINION OF U.S. EPA

PREscore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 44  
SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

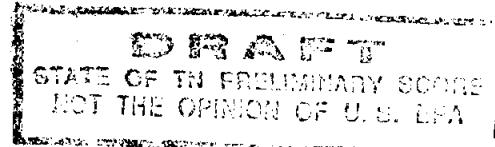
Hazardous Substances Found in an Observed Release

Sample Observed Release No.	Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
1	Bis (2-ethylhexyl) phthalate	100	1.00E+00	1.00E+02
1	Hexachlorocyclohexane, beta-	100	1.00E+00	1.00E+02
1	Hexachlorocyclohexane, delta-	1	1.00E+00	1.00E+00

DO NOT USE THIS STATEMENT OF PRELIMINARY SCORE IS NOT THE OPINION OF U.S. EPA

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SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

Toxicity/Persistence Value from Source Hazardous Substances:	1.00E+04
Toxicity/Persistence Value from Observed Release Hazardous Substances:	1.00E+02
Toxicity/Persistence Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	4.12E+02
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	32



Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

Sample ID: LC-SD-05  
Sample Medium: Sediment  
Location: 0.00 miles

LID 32 AS OF 11/1993  
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Hazardous Substance	Hazardous Substance Concentration	DW MCL Benchmark Concentration	Units
Bis (2-ethylhexyl) phthalate	2.7E+06	N.A.	ppb
Hexachlorocyclohexane, beta-	9.8E+03	N.A.	ppb
Hexachlorocyclohexane, delta	1.6E+03	N.A.	ppb

Documentation for LC-SD-05:

Sediment sample LC-SD-05 was collected in the small receiving stream at the eastern end of the site at 2:00 PM on 2/7/94. The 9.8 ppm Beta BHC and the 1.6 ppm Delta BHC concentrations detected in LC-SD-05 are both more than 3 times the concentrations of these substances found in background samples LC-SD-01 and LC-SD-04.

Reference: 50,51,52

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

Sample ID: LC-SD-05  
Distance from the Probable Point of Entry: 0.00 miles

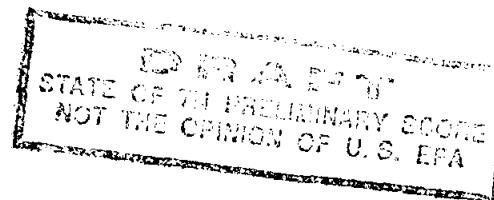
Documentation for LC-SD-05:

Sediment sample LC-SD-05 was collected in the small receiving stream at the eastern end of the site at 2:00 PM on 2/7/94. The 9.8 ppm Beta BHC and the 1.6 ppm Delta BHC concentrations detected in LC-SD-05 are both more than 3 times the concentrations of these

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SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS  
Landes Company - 04/14/94

substances found in background samples LC-SD-01 and LC-SD-04.

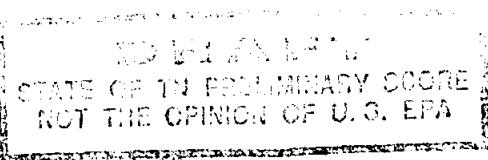
Reference: 50,51,52



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SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS  
Landes Company - 04/14/94

Level I Concentrations

Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population
- N/A and/or data not specified		
Population Served by Level I Intakes:		0.0
Level I Population Factor: 0.00E+00		



Level II Concentrations

-----

Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population
- N/A and/or data not specified		

=====

Population Served by Level II Intakes: 0.0

Level II Population Factor: 0.00E+00

Documentation for Intake N/A:

There are no known drinking water intakes located along the 15-mile downstream segment of the Landes Company site.

Reference: 15,30

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Potential Contamination

Intake ID	Average Annual Flow (cfs)	Population Served
- N/A and/or data not specified		

Type of Surface Water Body	Total Population	Dilution-Weighted Population
- N/A and/or data not specified		

Dilution-Weighted Population Served by Potentially Contaminated Intakes: 0.0

Potential Contamination Factor: 0.0

Nearest Intake

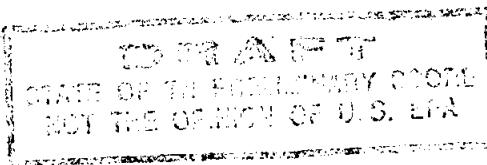
Location of Nearest Drinking Water Intake: N.A.

Nearest Intake Factor: 0.00

Resources

Resource Use: YES

Resource Value: 5.00E+00



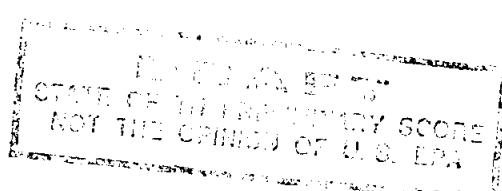
Documentation for Resources:

The Tennessee River, located approximately 5 and 1/4 miles northwest of the site, comprises the lower portion of the Landes Company 15-mile downstream segment. The Tennessee River is used as an industrial and drinking water supply. It is used for fishing, both commercial and private, and it is used for recreation, irrigation, and as a water source for livestock and wildlife.

Reference: 17,24-26,31,37

Source: 1 contaminated soil

Source Hazardous Waste Quantity Value: 0.44



Hazardous Substance	Toxicity Value	Persistence Value	Bio-accum. Value	Toxicity/Persistence/Bioaccum. Value
Acenaphthene	10	4.00E-01	5.00E+02	2.00E+03
Arsenic	10000	1.00E+00	5.00E+00	5.00E+04
Benzo(g,h,i)perylene	0	1.00E+00	5.00E+04	0.00E+00
Benzo(j,k)fluorene	100	1.00E+00	5.00E+03	5.00E+05
Benzo(k)fluoranthene	0	1.00E+00	5.00E+04	0.00E+00
Benzofluoranthene, 3,4-	10000	1.00E+00	5.00E+04	5.00E+08
Bis (2-ethylhexyl) phthalate	100	1.00E+00	5.00E+02	5.00E+04
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Chloro-3-methylphenol, 4-	1	1.00E+00	5.00E+01	5.00E+01
Chromium	10000	1.00E+00	5.00E+00	5.00E+04
Chrysene	0	1.00E+00	5.00E+02	0.00E+00
Cobalt	1	1.00E+00	5.00E-01	5.00E-01
Copper	0	1.00E+00	5.00E+04	0.00E+00
Cyanide	100	4.00E-01	5.00E-01	2.00E+01
Dibenz(a,h)anthracene	10000	1.00E+00	5.00E+04	5.00E+08
Dieldrin	10000	1.00E+00	5.00E+04	5.00E+08
Fluorene	100	1.00E+00	5.00E+03	5.00E+05
Heptachlor	1000	1.00E+00	5.00E+03	5.00E+06
Hexachlorobenzene	1000	1.00E+00	5.00E+03	5.00E+06
Hexachlorocyclohexane, alpha-	10000	1.00E+00	5.00E+02	5.00E+06
Hexachlorocyclohexane, beta-	100	1.00E+00	5.00E+02	5.00E+04
Hexachlorocyclohexane, delta-	1	1.00E+00	5.00E+00	5.00E+00
Indeno(1,2,3-CD)pyrene	0	1.00E+00	5.00E+04	0.00E+00
Iron	0	1.00E+00	5.00E-01	0.00E+00
Lead	10000	1.00E+00	5.00E+01	5.00E+05
Lindane	10000	1.00E+00	5.00E+02	5.00E+06
Manganese	10000	1.00E+00	5.00E-01	5.00E+03
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Naphthalene	100	4.00E-01	5.00E+02	2.00E+04
Nickel	10000	1.00E+00	5.00E-01	5.00E+03
Phenanthrene	0	4.00E-01	5.00E+01	0.00E+00
Phenol	1	1.00E+00	5.00E+00	5.00E+00
Pyrene	100	1.00E+00	5.00E+01	5.00E+03
Sodium	0	1.00E+00	5.00E-01	0.00E+00
Toluene	10	4.00E-01	5.00E+01	2.00E+02
Trichlorophenol, 2,4,6-	10	1.00E+00	5.00E+02	5.00E+03
Zinc	10	1.00E+00	5.00E+02	5.00E+03

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 SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

Source: 2 waste piles

Source Hazardous Waste Quantity Value: 412.00

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Hazardous Substance	Toxicity Value	Persistence Value	Bio-accum. Value	Toxicity/Persistence/Bioaccum. Value
Acenaphthene	10	4.00E-01	5.00E+02	2.00E+03
Acenaphthylene	0	1.00E+00	5.00E+02	0.00E+00
Aluminum	0	1.00E+00	5.00E+01	0.00E+00
Anthracene	10	4.00E-01	5.00E+03	2.00E+04
Arsenic	10000	1.00E+00	5.00E+00	5.00E+04
Barium	10	1.00E+00	5.00E-01	5.00E+00
Benz(a)anthracene	1000	1.00E+00	5.00E+04	5.00E+07
Benzo(a)pyrene	10000	1.00E+00	5.00E+04	5.00E+08
Benzo(g,h,i)perylene	0	1.00E+00	5.00E+04	0.00E+00
Benzofluoranthene, 3,4-	10000	1.00E+00	5.00E+04	5.00E+08
Bis (2-ethylhexyl) phthalate	100	1.00E+00	5.00E+02	5.00E+04
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Chromium	10000	1.00E+00	5.00E+00	5.00E+04
Chrysene	0	1.00E+00	5.00E+02	0.00E+00
Cobalt	1	1.00E+00	5.00E-01	5.00E-01
Copper	0	1.00E+00	5.00E+04	0.00E+00
Cyanide	100	4.00E-01	5.00E-01	2.00E+01
Di-n-butyl phthalate	10	1.00E+00	5.00E+03	5.00E+04
Dibenz(a,h)anthracene	10000	1.00E+00	5.00E+04	5.00E+08
Diethyl phthalate	1	1.00E+00	5.00E+02	5.00E+02
Fluorene	100	1.00E+00	5.00E+03	5.00E+05
Hexachlorobenzene	1000	1.00E+00	5.00E+03	5.00E+06
Hexachlorocyclohexane, alpha-	10000	1.00E+00	5.00E+02	5.00E+06
Hexachlorocyclohexane, beta-	100	1.00E+00	5.00E+02	5.00E+04
Hexachlorocyclohexane, delta-	1	1.00E+00	5.00E+00	5.00E+00
Indeno(1,2,3-CD)pyrene	0	1.00E+00	5.00E+04	0.00E+00
Iron	0	1.00E+00	5.00E-01	0.00E+00
Lead	10000	1.00E+00	5.00E+01	5.00E+05
Lindane	10000	1.00E+00	5.00E+02	5.00E+06
Magnesium	0	1.00E+00	5.00E-01	0.00E+00
Manganese	10000	1.00E+00	5.00E-01	5.00E+03
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Naphthalene	100	4.00E-01	5.00E+02	2.00E+04
Nickel	10000	1.00E+00	5.00E-01	5.00E+03
Phenanthrene	0	4.00E-01	5.00E+01	0.00E+00
Pyrene	100	1.00E+00	5.00E+01	5.00E+03
Selenium	100	1.00E+00	5.00E+03	5.00E+05
Silver	100	1.00E+00	5.00E+01	5.00E+03
Sodium	0	1.00E+00	5.00E-01	0.00E+00
Zinc	10	1.00E+00	5.00E+02	5.00E+03

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SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

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SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

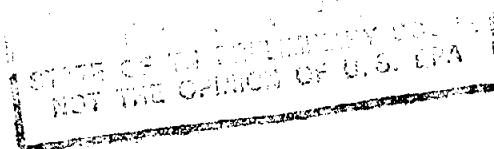
Hazardous Substances Found in an Observed Release

Sample No.	Observed Release Hazardous Substance	Toxicity Value	Persistence Value	Bio- accum. Value	Toxicity/ Bioaccum. Value	Persistence/ Value
1	Bis (2-ethylhexyl) phthalate	100	1.00E+00	5.00E+02	5.00E+04	
1	Hexachlorocyclohexane, beta-	100	1.00E+00	5.00E+02	5.00E+04	
1	Hexachlorocyclohexane, delta-	1	1.00E+00	5.00E+00	5.00E+00	

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PREScore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 55  
SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

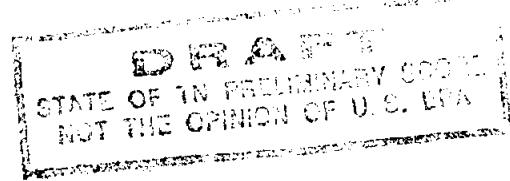
Toxicity/Persistence/Bioaccumulation Value from Source Hazardous Substances:	5.00E+08
Toxicity/Persistence/Bioaccumulation Value from Observed Release Hazardous Substances:	5.00E+04
Toxicity/Persistence/Bioaccumulation Factor:	5.00E+08
Sum of Source Hazardous Waste Quantity Values:	4.12E+02
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	320



Level I Concentrations

- N/A and/or data not specified

Level II Concentrations



Sample ID: LC-SD-05  
Sample Medium: Sediment  
Location: 0.00 miles

Hazardous Substance	Hazardous Substance Concentration	FDAAL Benchmark Concentration	Units
Bis (2-ethylhexyl) phthalate	2.7E+06	N.A.	ppb
Hexachlorocyclohexane, beta-	9.8E+03	N.A.	ppb
Hexachlorocyclohexane, delta	1.6E+03	N.A.	ppb

Documentation for LC-SD-05:

Sediment sample LC-SD-05 was collected in the small receiving stream at the eastern end of the site at 2:00 PM on 2/7/94. The 9.8 ppm Beta BHC and the 1.6 ppm Delta BHC concentrations detected in LC-SD-05 are both more than 3 times the concentrations of these substances found in background samples LC-SD-01 and LC-SD-04.

Reference: 50,51,52

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

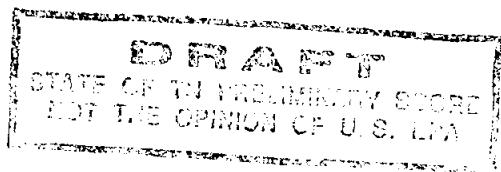
Sample ID: LC-SD-05  
Distance from the Probable Point of Entry: 0.00 miles

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SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS  
Landes Company - 04/14/94

Documentation for LC-SD-05:

Sediment sample LC-SD-05 was collected in the small receiving stream at the eastern end of the site at 2:00 PM on 2/7/94. The 9.8 ppm Beta BHC and the 1.6 ppm Delta BHC concentrations detected in LC-SD-05 are both more than 3 times the concentrations of these substances found in background samples LC-SD-01 and LC-SD-04.

Reference: 50,51,52



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SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS  
Landes Company - 04/14/94

**Level I Concentrations**

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Fishery	Annual Production (pounds)	Human Food Chain Population Value
- N/A and/or data not specified		

=====

Sum of Human Food Chain Population Values: 0.00E+00

Level I Concentrations Factor: 0.00E+00

Level II Concentrations

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Fishery	Annual Production (pounds)	Human Food Chain Population Value
- N/A and/or data not specified		

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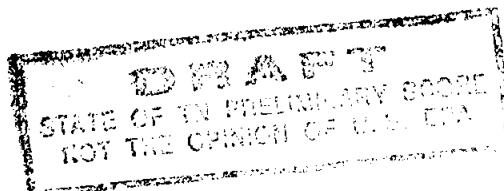
Sum of Human Food Chain Population Values: 0.00E+00

Level II Concentrations Factor: 0.00E+00

Documentation for Chattanooga Creek Fishery:

The annual production of human food chain organisms from Chattanooga Creek is not known. It is assumed to be less than 100 lbs. a year.

Reference: 24-26,31,37,55



Potential Contamination

Fishery	Annual Production (pounds)	Type of Surface Water Body	Average Annual Flow (cfs)	Pop. Value (Pi)	Dilution Weight (Di)	Pi*Di
2 Tennessee River	310.0	River	36650	0.3	1.00E-04	3.00E-05

Sum of (Pi\*Di): 3.00E-05

Potential Human Food Chain Contamination Factor: 3.00E-06

Documentation for Tennessee River Fishery:

The annual production figure is based on information supplied by the Tennessee Wildlife Resources Agency.

Reference: 25,55

Food Chain Individual

Location of Nearest Fishery: Tennessee River  
Distance from the Probable Point of Entry: 5.25 miles  
Type of Surface Water Body: River  
Dilution Weight: 0.0001000  
Level of Contamination: Bioaccumulation > 500

Food Chain Individual Factor: 20.00

Documentation for Tennessee River:

The Tennessee River starts at segment mile 5.25 and continues downstream for the remaining 9.75 miles of the Landes Company downstream segment. The flow rate is based on reference material.

Reference: 24,47

PREScore 2.0 - PREScore.TCL File 05/11/93 PAGE: 61  
 SW PATHWAY: OVERLAND FLOW/FLOOD ENVIRONMENTAL THREAT WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

Source: 1 contaminated soil

Source Hazardous Waste Quantity Value: 0.44

Hazardous Substance	Eco-toxicity Value	Persistence Value	Bio-accum. Value	Ecotoxicity/Persistence/Bioaccum. Value
Acenaphthene	10000	4.00E-01	5.00E+02	2.00E+06
Arsenic	10	1.00E+00	5.00E+01	5.00E+02
Benzo(g,h,i)perylene	0	1.00E+00	5.00E+04	0.00E+00
Benzo(j,k)fluorene	10000	1.00E+00	5.00E+03	5.00E+07
Benzo(k)fluoranthene	0	1.00E+00	5.00E+04	0.00E+00
Benzofluoranthene, 3,4-	0	1.00E+00	5.00E+04	0.00E+00
Bis (2-ethylhexyl) phthalate	1000	1.00E+00	5.00E+04	5.00E+07
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Chloro-3-methylphenol, 4-	100	1.00E+00	5.00E+01	5.00E+03
Chromium	10000	1.00E+00	5.00E+00	5.00E+04
Chrysene	1000	1.00E+00	5.00E+03	5.00E+06
Cobalt	0	1.00E+00	5.00E+03	0.00E+00
Copper	100	1.00E+00	5.00E+04	5.00E+06
Cyanide	1000	4.00E-01	5.00E-01	2.00E+02
Dibenz(a,h)anthracene	0	1.00E+00	5.00E+04	0.00E+00
Dieldrin	10000	1.00E+00	5.00E+04	5.00E+08
Fluorene	1000	1.00E+00	5.00E+03	5.00E+06
Heptachlor	10000	1.00E+00	5.00E+04	5.00E+08
Hexachlorobenzene	10	1.00E+00	5.00E+04	5.00E+05
Hexachlorocyclohexane, alpha-	100	1.00E+00	5.00E+02	5.00E+04
Hexachlorocyclohexane, beta-	0	1.00E+00	5.00E+02	0.00E+00
Hexachlorocyclohexane, delta-	0	1.00E+00	5.00E+00	0.00E+00
Indeno(1,2,3-CD)pyrene	0	1.00E+00	5.00E+04	0.00E+00
Iron	10	1.00E+00	5.00E-01	5.00E+00
Lead	1000	1.00E+00	5.00E+03	5.00E+06
Lindane	10000	1.00E+00	5.00E+02	5.00E+06
Manganese	0	1.00E+00	5.00E+04	0.00E+00
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Naphthalene	1000	4.00E-01	5.00E+02	2.00E+05
Nickel	10	1.00E+00	5.00E+02	5.00E+03
Phenanthrene	1000	4.00E-01	5.00E+03	2.00E+06
Phenol	10000	1.00E+00	5.00E+00	5.00E+04
Pyrene	0	1.00E+00	5.00E+01	0.00E+00
Sodium	0	1.00E+00	5.00E-01	0.00E+00
Toluene	100	4.00E-01	5.00E+01	2.00E+03
Trichlorophenol, 2,4,6-	1000	1.00E+00	5.00E+04	5.00E+07
Zinc	10	1.00E+00	5.00E+02	5.00E+03

Source: 2 waste piles

Source Hazardous Waste Quantity Value: 412.00

Hazardous Substance	Eco-toxicity Value	Persistence Value	Bio-accum. Value	Ecotoxicity/Persistence/Bioaccum. Value
Acenaphthene	10000	4.00E-01	5.00E+02	2.00E+06
Acenaphthylene	0	1.00E+00	5.00E+02	0.00E+00
Aluminum	10	1.00E+00	5.00E+02	5.00E+03
Anthracene	10000	4.00E-01	5.00E+03	2.00E+07
Arsenic	10	1.00E+00	5.00E+01	5.00E+02
Barium	1	1.00E+00	5.00E-01	5.00E-01
Benz(a)anthracene	10000	1.00E+00	5.00E+04	5.00E+08
Benzo(a)pyrene	10000	1.00E+00	5.00E+04	5.00E+08
Benzo(g,h,i)perylene	0	1.00E+00	5.00E+04	0.00E+00
Benzofluoranthene, 3,4-	0	1.00E+00	5.00E+04	0.00E+00
Bis (2-ethylhexyl) phthalate	1000	1.00E+00	5.00E+04	5.00E+07
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Chromium	10000	1.00E+00	5.00E+00	5.00E+04
Chrysene	1000	1.00E+00	5.00E+03	5.00E+06
Cobalt	0	1.00E+00	5.00E+03	0.00E+00
Copper	100	1.00E+00	5.00E+04	5.00E+06
Cyanide	1000	4.00E-01	5.00E-01	2.00E+02
Di-n-butyl phthalate	1000	1.00E+00	5.00E+03	5.00E+06
Dibenz(a,h)anthracene	0	1.00E+00	5.00E+04	0.00E+00
Diethyl phthalate	10000	1.00E+00	5.00E+02	5.00E+06
Fluorene	1000	1.00E+00	5.00E+03	5.00E+06
Hexachlorobenzene	10	1.00E+00	5.00E+04	5.00E+05
Hexachlorocyclohexane, alpha-	100	1.00E+00	5.00E+02	5.00E+04
Hexachlorocyclohexane, beta-	0	1.00E+00	5.00E+02	0.00E+00
Hexachlorocyclohexane, delta-	0	1.00E+00	5.00E+00	0.00E+00
Indeno(1,2,3-CD)pyrene	0	1.00E+00	5.00E+04	0.00E+00
Iron	10	1.00E+00	5.00E-01	5.00E+00
Lead	1000	1.00E+00	5.00E+03	5.00E+06
Lindane	10000	1.00E+00	5.00E+02	5.00E+06
Magnesium	0	1.00E+00	5.00E-01	0.00E+00
Manganese	0	1.00E+00	5.00E+04	0.00E+00
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Naphthalene	1000	4.00E-01	5.00E+02	2.00E+05
Nickel	10	1.00E+00	5.00E+02	5.00E+03
Phenanthrene	1000	4.00E-01	5.00E+03	2.00E+06
Pyrene	0	1.00E+00	5.00E+01	0.00E+00
Selenium	100	1.00E+00	5.00E+03	5.00E+05
Silver	10000	1.00E+00	5.00E+01	5.00E+05
Sodium	0	1.00E+00	5.00E-01	0.00E+00
Zinc	10	1.00E+00	5.00E+02	5.00E+03

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SW PATHWAY: OVERLAND FLOW/FLOOD ENVIRONMENTAL THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

Hazardous Substances Found in an Observed Release

Sample No.	Observed Release Hazardous Substance	Eco- toxicity Value	Persistence Value	Bio- accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
1	Bis (2-ethylhexyl) phthalate	1000	1.00E+00	5.00E+04	5.00E+07
1	Hexachlorocyclohexane, beta-	100	1.00E+00	5.00E+02	5.00E+04
1	Hexachlorocyclohexane, delta-	100	1.00E+00	5.00E+00	5.00E+02



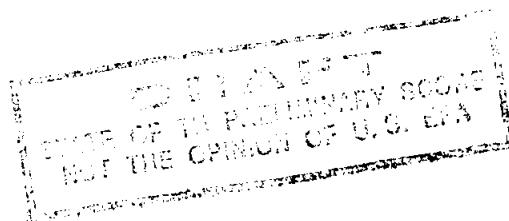
Ecotoxicity/Persistence/Bioaccumulation Value from Source Hazardous Substances:	5.00E+08
Ecotoxicity/Persistence/Bioaccumulation Value from Observed Release Hazardous Substances:	5.00E+07
Ecotoxicity/Persistence/Bioaccumulation Factor:	5.00E+08
Sum of Source Hazardous Waste Quantity Values:	4.12E+02
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	320

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

Sample ID: LC-SD-05  
Sample Medium: Sediment  
Location: 0.00 miles



Hazardous Substance	Hazardous Substance Concentration	AWQC Benchmarks		Units
		FRESH	SALT	
Bis (2-ethylhexyl) phthalate	2.7E+06			N.A. ppb
Hexachlorocyclohexane, beta-	9.8E+03			N.A. ppb
Hexachlorocyclohexane, delta	1.6E+03			N.A. ppb

Documentation for LC-SD-05:

Sediment sample LC-SD-05 was collected in the small receiving stream at the eastern end of the site at 2:00 PM on 2/7/94. The 9.8 ppm Beta BHC and the 1.6 ppm Delta BHC concentrations detected in LC-SD-05 are both more than 3 times the concentrations of these substances found in background samples LC-SD-01 and LC-SD-04.

Reference: 50,51,52

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

Sample ID: LC-SD-05  
Distance from the Probable Point of Entry: 0.00 miles

Documentation for LC-SD-05:

Sediment sample LC-SD-05 was collected in the small receiving stream at the eastern end of the site at 2:00 PM on 2/7/94. The 9.8 ppm Beta BHC and the 1.6 ppm Delta BHC concentrations detected in LC-SD-05 are both more than 3 times the concentrations of these substances found in background samples LC-SD-01 and LC-SD-04.

Reference: 50,51,52

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SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS  
Landes Company - 04/14/94

Level I Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value
- N/A and/or data not specified		

Sum of Sensitive Environments Values: 0

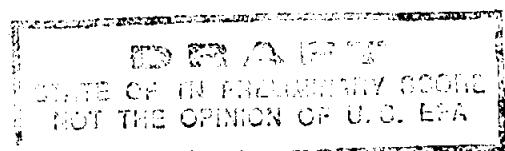
Wetlands

Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)
- N/A and/or data not specified		

Total Wetlands Frontage: 0.00 Miles Total Wetlands Value: 0

=====  
Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00

Level I Concentrations Factor: 0.00E+00



PREScore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 68  
SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS  
Landes Company - 04/14/94

Level II Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value
- N/A and/or data not specified		

Sum of Sensitive Environments Values: 0

Wetlands

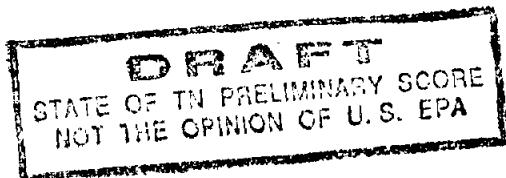
Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)
- N/A and/or data not specified		

Total Wetlands Frontage: 0.00 Miles Total Wetlands Value: 0

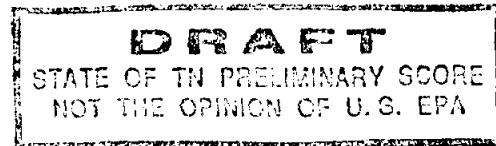
=====

Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00

Level II Concentrations Factor: 0.00E+00



Potential Contamination



Sensitive Environments

Type of Surface	Sensitive Environment	Sensitive Environment Value
Water Body	Sensitive Environment	

Wetlands

Type of Surface	Sensitive Environment	Wetlands Frontage	Wetlands Value
Water Body	Sensitive Environment		
River	1 wetland	0.50	25

Documentation for Sensitive Environment wetland:

A small wetland borders the southeast corner of the site. The frontage length is an estimate based on the site topographic map. The probable point of entry for the wetland is 50 to 100 feet from defined soil and waste pile contamination.

Reference: 29,47,50-52

PREScore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 70  
SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS  
Landes Company - 04/14/94

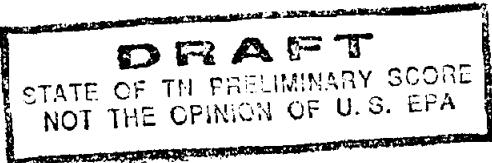
Type of Surface Water Body	Sum of Sens. Environment Values(Sj)	Wetland Frontage Values(Wj)	Dilution Weight (Dj)	Sum of Dj(Wj+Sj) D(j(Wj+Sj))
Moderate to Large Stream	0	25	1.00E-02	2.50E-01

=====

Sum of Dj(Wj+Sj):	2.50E-01
Sum of Dj(Wj+Sj)/10:	2.50E-02

=====

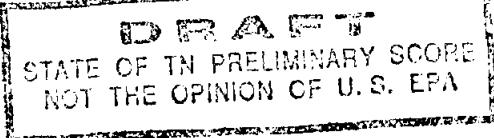
Potential Contamination Sensitive Environment Factor: 2.50E-02



Containment

No.	Source ID	HWQ Value	Containment Value
1	contaminated soil	4.41E-01	10
2	waste piles	4.12E+02	10

Containment Factor 10



Documentation for Ground Water Containment, Source contaminated soil:

The contaminated soil source has no maintained engineered cover and no functioning and maintained run-on control system and runoff management system.

Reference: 27-29,50-52,55

Documentation for Ground Water Containment, Source waste piles:

The waste pile source at the southeastern corner of the site has no maintained engineered cover and no functioning and maintained run-on control system and runoff management system.

Reference: 27-29,55

Net Precipitation

Net Precipitation (inches)	0.00
----------------------------	------

Documentation for Net Precipitation:

HRS Figure 3-2 was used to determine the net precipitation factor value.

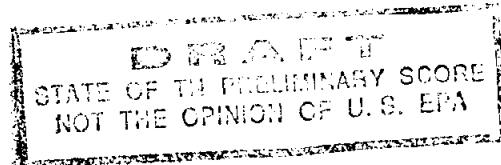
Reference: 47,55

Aquifer: Chickamauga Limestone

Type of Aquifer: Karst

Overlaying Aquifer: 0

Interconnected with: 0



Documentation for Chickamauga Limestone Aquifer:

The bedrock underlying the site is the Chickamauga Limestone. It occurs at a depth of from 12 to 24 feet. The Chickamauga limestone is a karst unit that has no confining layers. It reaches a thickness of from 1,000 to 1,500 feet and is the aquifer of concern. Groundwater occurs along joints, fractures, and bedding planes that have been enlarged through chemical weathering.

Reference: 2,4,49

OBSERVED RELEASE

No.	Well ID	Well Type	Distance (miles)	Level of Contamination
-----				
	- N/A and/or data not specified			
=====				
		Observed Release Factor		0

POTENTIAL TO RELEASE

STATE OF INDEPENDENCE SURVEY  
NOT THE OPINION OF U.S. EPA

Ground Water to Surface Water Angle

Probable Point of Entry 0.00 miles

Angle Theta 0

Containment

Containment Factor 10

Net Precipitation

Net Precipitation Factor 10

Depth to Aquifer

A. Depth of Hazardous Substances 0.25 feet

Documentation for Depth of Hazardous Substances:

The lowest known point of contamination is an estimate based on visual observation at the time of soil contamination.

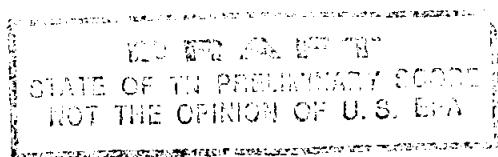
Reference: 50-52

B. Depth to Aquifer from Surface 12.00 feet

Documentation for Depth to Aquifer from Surface :

The geological interval from the surface to the top of the Chickamauga Limestone aquifer consists of fill material and native residual clay soils. The fill varies from 2 to 10 feet in thickness and consists of brown and gray, silty to sandy clay containing crushed stone, gravel, and rock fragments. The fill material is moderately permeable. The residual clay underlying the fill is reddish brown, silty, and contains chert fragments. It is relatively impermeable.

Reference: 49



C. Depth to Aquifer (B - A) 11.75 feet

Depth to Aquifer Factor 5

Travel Time

-----

Are All Layers Karst? NO

Documentation for Karst Layers:

The absence of karst layers in the interval between the site contaminated soils and sediments and the aquifer of concern is documented by past drilling activity at the site.

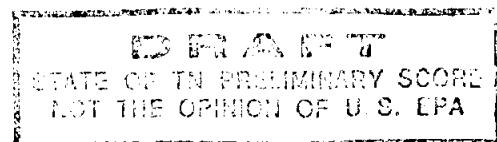
Reference: 49

Thickness of Layer(s) with Lowest Conductivity 10.00 feet

Documentation for Thickness of Layers with Lowest Conductivity:

The thickness of the layer with the lowest hydraulic conductivity (i.e., native clays) at the site is an estimate based on the Tri-State Phase 2 drilling logs. The hydrologic conductivity of this layer is based on information in the Phase 2 report as well as on HRS Table 3-6.

Reference: 49,55



Hydraulic Conductivity (cm/sec) 1.0E-08

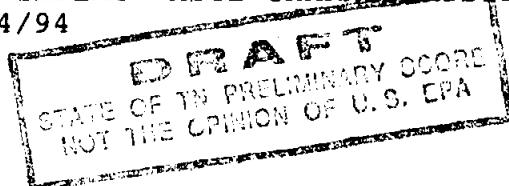
Documentation for Hydraulic Conductivity:

The hydraulic conductivity of the intervening layers is based on the Tri State Phase 2 drilling and HRS Table 3-6.

Reference: 49,55

Travel Time Factor 5

=====  
Potential to Release Factor 200



Source: 1 contaminated soil

Source Hazardous Waste Quantity Value: 0.44

Hazardous Substance	Toxicity Factor	Persist. Value	Mobility Value	Toxicity/Mobility/Persistence
Acenaphthene	10	4.00E-01	2.00E-03	8.00E-03
Arsenic	10000	1.00E+00	1.00E-02	1.00E+02
Benzo(g,h,i)perylene	0	1.00E+00	2.00E-09	0.00E+00
Benzo(j,k)fluorene	100	1.00E+00	2.00E-07	2.00E-05
Benzo(k)fluoranthene	0	1.00E+00	2.00E-09	0.00E+00
Benzofluoranthene, 3,4-	10000	1.00E+00	2.00E-09	2.00E-05
Bis (2-ethylhexyl) phthalate	100	1.00E+00	2.00E-07	2.00E-05
Cadmium	10000	1.00E+00	2.00E-01	2.00E+03
Chloro-3-methylphenol, 4-	1	1.00E+00	1.00E-02	1.00E-02
Chromium	10000	1.00E+00	1.00E-02	1.00E+02
Chrysene	0	1.00E+00	2.00E-09	0.00E+00
Cobalt	1	1.00E+00	1.00E-02	1.00E-02
Copper	0	1.00E+00	1.00E-02	0.00E+00
Cyanide	100	4.00E-01	2.00E-05	8.00E-04
Dibenz(a,h)anthracene	10000	1.00E+00	2.00E-09	2.00E-05
Dieldrin	10000	1.00E+00	2.00E-07	2.00E-03
Fluorene	100	1.00E+00	2.00E-03	2.00E-01
Heptachlor	1000	1.00E+00	2.00E-05	2.00E-02
Hexachlorobenzene	1000	1.00E+00	2.00E-07	2.00E-04
Hexachlorocyclohexane, alpha-	10000	1.00E+00	2.00E-03	2.00E+01
Hexachlorocyclohexane, beta-	100	1.00E+00	2.00E-05	2.00E-03
Hexachlorocyclohexane, delta-	1	1.00E+00	2.00E-03	2.00E-03
Indeno(1,2,3-CD)pyrene	0	1.00E+00	2.00E-09	0.00E+00
Iron	0	1.00E+00	1.00E-02	0.00E+00
Lead	10000	1.00E+00	2.00E-05	2.00E-01
Lindane	10000	1.00E+00	2.00E-05	2.00E-01
Manganese	10000	1.00E+00	1.00E-02	1.00E+02
Mercury	10000	1.00E+00	2.00E-05	2.00E-01
Naphthalene	100	4.00E-01	2.00E-03	8.00E-02
Nickel	10000	1.00E+00	2.00E-05	2.00E-01
Phenanthrene	0	4.00E-01	2.00E-05	0.00E+00
Phenol	1	1.00E+00	1.00E+00	1.00E+00
Pyrene	100	1.00E+00	2.00E-09	2.00E-07
Sodium	0	1.00E+00	1.00E-02	0.00E+00
Toluene	10	4.00E-01	1.00E-02	4.00E-02
Trichlorophenol, 2,4,6-	10	1.00E+00	1.00E+00	1.00E+01
Zinc	10	1.00E+00	2.00E-03	2.00E-02

SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

Source: 2 waste piles

Source Hazardous Waste Quantity Value: 412.00

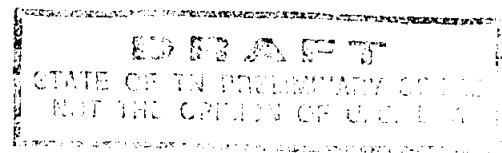
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 STATE OF IN PRELIMINARY SURVEY /  
 NOT THE OPINION OF U.S. EPA /  
 PRELIMINARY SURVEY /

Hazardous Substance	Toxicity Factor	Persist. Value	Mobility Value	Toxicity/Mobility/Persistence
Acenaphthene	10	4.00E-01	2.00E-03	8.00E-03
Acenaphthylene	0	1.00E+00	2.00E-03	0.00E+00
Aluminum	0	1.00E+00	2.00E-05	0.00E+00
Anthracene	10	4.00E-01	2.00E-07	8.00E-07
Arsenic	10000	1.00E+00	1.00E-02	1.00E+02
Barium	10	1.00E+00	1.00E-02	1.00E-01
Benz(a)anthracene	1000	1.00E+00	2.00E-09	2.00E-06
Benzo(a)pyrene	10000	1.00E+00	2.00E-09	2.00E-05
Benzo(g,h,i)perylene	0	1.00E+00	2.00E-09	0.00E+00
Benzofluoranthene, 3,4-	10000	1.00E+00	2.00E-09	2.00E-05
Bis (2-ethylhexyl) phthalate	100	1.00E+00	2.00E-07	2.00E-05
Cadmium	10000	1.00E+00	2.00E-01	2.00E+03
Chromium	10000	1.00E+00	1.00E-02	1.00E+02
Chrysene	0	1.00E+00	2.00E-09	0.00E+00
Cobalt	1	1.00E+00	1.00E-02	1.00E-02
Copper	0	1.00E+00	1.00E-02	0.00E+00
Cyanide	100	4.00E-01	2.00E-05	8.00E-04
Di-n-butyl phthalate	10	1.00E+00	2.00E-03	2.00E-02
Dibenz(a,h)anthracene	10000	1.00E+00	2.00E-09	2.00E-05
Diethyl phthalate	1	1.00E+00	1.00E-02	1.00E-02
Fluorene	100	1.00E+00	2.00E-03	2.00E-01
Hexachlorobenzene	1000	1.00E+00	2.00E-07	2.00E-04
Hexachlorocyclohexane, alpha-	10000	1.00E+00	2.00E-03	2.00E+01
Hexachlorocyclohexane, beta-	100	1.00E+00	2.00E-05	2.00E-03
Hexachlorocyclohexane, delta-	1	1.00E+00	2.00E-03	2.00E-03
Indeno(1,2,3-CD)pyrene	0	1.00E+00	2.00E-09	0.00E+00
Iron	0	1.00E+00	1.00E-02	0.00E+00
Lead	10000	1.00E+00	2.00E-05	2.00E-01
Lindane	10000	1.00E+00	2.00E-05	2.00E-01
Magnesium	0	1.00E+00	2.00E-05	0.00E+00
Manganese	10000	1.00E+00	1.00E-02	1.00E+02
Mercury	10000	1.00E+00	2.00E-05	2.00E-01
Naphthalene	100	4.00E-01	2.00E-03	8.00E-02
Nickel	10000	1.00E+00	2.00E-05	2.00E-01
Phenanthrene	0	4.00E-01	2.00E-05	0.00E+00
Pyrene	100	1.00E+00	2.00E-09	2.00E-07
Selenium	100	1.00E+00	1.00E-02	1.00E+00
Silver	100	1.00E+00	2.00E-07	2.00E-05
Sodium	0	1.00E+00	1.00E-02	0.00E+00
Zinc	10	1.00E+00	2.00E-03	2.00E-02

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SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

Hazardous Substances Found in an Observed Release

Observed Release Hazardous Substance	Toxicity Factor	Persist. Value	Toxicity/ Persistence
- N/A and/or data not specified	Value		



PREscore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 79  
SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

Toxicity/Mobility/Persistence Value from Source Hazardous Substances: 2.00E+03

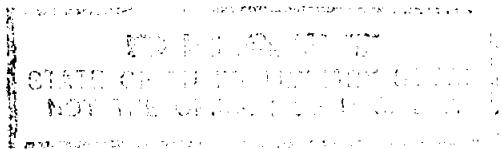
Toxicity/Mobility/Persistence Value from Observed Release Hazardous Substances: 0.00E+00

Toxicity/Mobility/Persistence Factor: 2.00E+03

Sum of Source Hazardous Waste Quantity Values: 4.12E+02

Hazardous Waste Quantity Factor: 100

Waste Characteristics Factor Category: 18



Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

- N/A and/or data not specified

Level I Concentrations

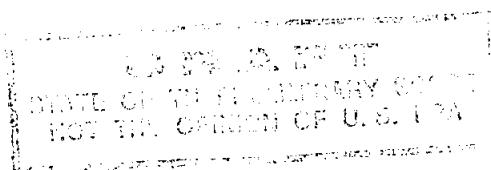
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Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population
- N/A and/or data not specified		

---

Population Served by Level I Intakes: 0.0

Level I Population Factor: 0.00E+00



Level II Concentrations

---

Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population
-	N/A and/or data not specified	

---

Population Served by Level II Intakes: 0.0

Level II Population Factor: 0.00E+00

Potential Contamination

Intake ID	Average Annual Flow (cfs)	Population Served
- N/A and/or data not specified		

Documentation for Intake N/A:

There are no known drinking water intakes located along the 15-mile downstream segment of the Landes Company site.

Reference: 15,30

Type of Surface Water Body	Total Population	Dilution-Weighted Population
- N/A and/or data not specified		

=====

Dilution-Weighted Population Served  
by Potentially Contaminated Intakes: 0.0

Potential Contamination Factor: 0.0

Nearest Intake

Location of Nearest Drinking Water Intake: N.A.

Nearest Intake Factor: 0.00

Resources

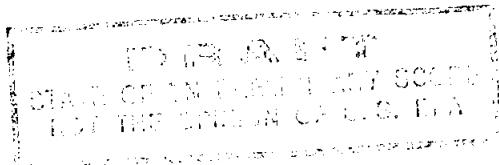
Resource Use: YES

Resource Value: 5.00E+00

Documentation for Resources:

The Tennessee River, located approximately 5 and 1/4 miles northwest of the site, comprises the lower portion of the Landes Company 15-mile downstream segment. The Tennessee River is used as an industrial and drinking water supply. It is used for fishing, both commercial and private, and it is used for recreation, irrigation, and as a water source for livestock and wildlife.

Reference: 17,24-26,31,37



SW PATHWAY: GW TO SW COMPONENT HUMAM FOOD CHAIN THREAT WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

Source: 1 contaminated soil

Source Hazardous Waste Quantity Value: 0.44

Hazardous Substance	Toxicity Value	Persist. Value	Mobility Value	Bio-accum. Value	Tox./Mobil./ Persistence/ Bioaccum. Value
Acenaphthene	10	4.00E-01	2.00E-03	5.00E+02	4.00E+00
Arsenic	10000	1.00E+00	1.00E-02	5.00E+00	5.00E+02
Benzo(g,h,i)perylene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00
Benzo(j,k)fluorene	100	1.00E+00	2.00E-07	5.00E+03	1.00E-01
Benzo(k)fluoranthene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00
Benzofluoranthene, 3,4-	10000	1.00E+00	2.00E-09	5.00E+04	1.00E+00
Bis (2-ethylhexyl) phthalate	100	1.00E+00	2.00E-07	5.00E+02	1.00E-02
Cadmium	10000	1.00E+00	2.00E-01	5.00E+03	1.00E+07
Chloro-3-methylphenol, 4-	1	1.00E+00	1.00E-02	5.00E+01	5.00E-01
Chromium	10000	1.00E+00	1.00E-02	5.00E+00	5.00E+02
Chrysene	0	1.00E+00	2.00E-09	5.00E+02	0.00E+00
Cobalt	1	1.00E+00	1.00E-02	5.00E-01	5.00E-03
Copper	0	1.00E+00	1.00E-02	5.00E+04	0.00E+00
Cyanide	100	4.00E-01	2.00E-05	5.00E-01	4.00E-04
Dibenz(a,h)anthracene	10000	1.00E+00	2.00E-09	5.00E+04	1.00E+00
Dieldrin	10000	1.00E+00	2.00E-07	5.00E+04	1.00E+02
Fluorene	100	1.00E+00	2.00E-03	5.00E+03	1.00E+03
Heptachlor	1000	1.00E+00	2.00E-05	5.00E+03	1.00E+02
Hexachlorobenzene	1000	1.00E+00	2.00E-07	5.00E+03	1.00E+00
Hexachlorocyclohexane, alpha-	10000	1.00E+00	2.00E-03	5.00E+02	1.00E+04
Hexachlorocyclohexane, beta-	100	1.00E+00	2.00E-05	5.00E+02	1.00E+00
Hexachlorocyclohexane, delta-	1	1.00E+00	2.00E-03	5.00E+00	1.00E-02
Indeno(1,2,3-CD)pyrene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00
Iron	0	1.00E+00	1.00E-02	5.00E-01	0.00E+00
Lead	10000	1.00E+00	2.00E-05	5.00E+01	1.00E+01
Lindane	10000	1.00E+00	2.00E-05	5.00E+02	1.00E+02
Manganese	10000	1.00E+00	1.00E-02	5.00E-01	5.00E+01
Mercury	10000	1.00E+00	2.00E-05	5.00E+04	1.00E+04
Naphthalene	100	4.00E-01	2.00E-03	5.00E+02	4.00E+01
Nickel	10000	1.00E+00	2.00E-05	5.00E-01	1.00E-01
Phenanthrene	0	4.00E-01	2.00E-05	5.00E+01	0.00E+00
Phenol	1	1.00E+00	1.00E+00	5.00E+00	5.00E+00
Pyrene	100	1.00E+00	2.00E-09	5.00E+01	1.00E-05
Sodium	0	1.00E+00	1.00E-02	5.00E-01	0.00E+00
Toluene	10	4.00E-01	1.00E-02	5.00E+01	2.00E+00
Trichlorophenol, 2,4,6-	10	1.00E+00	1.00E+00	5.00E+02	5.00E+03
Zinc	10	1.00E+00	2.00E-03	5.00E+02	1.00E+01

SW PATHWAY: GW TO SW COMPONENT HUMAM FOOD CHAIN THREAT WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

Source: 2 waste piles

Source Hazardous Waste Quantity Value: 412.00

Hazardous Substance	Toxicity Value	Persist. Value	Mobility Value	Bio- accum. Value	Tox./Mobil./ Persistence/ Bioaccum. Value
Acenaphthene	10	4.00E-01	2.00E-03	5.00E+02	4.00E+00
Acenaphthylene	0	1.00E+00	2.00E-03	5.00E+02	0.00E+00
Aluminum	0	1.00E+00	2.00E-05	5.00E+01	0.00E+00
Anthracene	10	4.00E-01	2.00E-07	5.00E+03	4.00E-03
Arsenic	10000	1.00E+00	1.00E-02	5.00E+00	5.00E+02
Barium	10	1.00E+00	1.00E-02	5.00E-01	5.00E-02
Benz(a)anthracene	1000	1.00E+00	2.00E-09	5.00E+04	1.00E-01
Benzo(a)pyrene	10000	1.00E+00	2.00E-09	5.00E+04	1.00E+00
Benzo(g,h,i)perylene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00
Benzofluoranthene, 3,4-	10000	1.00E+00	2.00E-09	5.00E+04	1.00E+00
Bis (2-ethylhexyl) phthalate	100	1.00E+00	2.00E-07	5.00E+02	1.00E-02
Cadmium	10000	1.00E+00	2.00E-01	5.00E+03	1.00E+07
Chromium	10000	1.00E+00	1.00E-02	5.00E+00	5.00E+02
Chrysene	0	1.00E+00	2.00E-09	5.00E+02	0.00E+00
Cobalt	1	1.00E+00	1.00E-02	5.00E-01	5.00E-03
Copper	0	1.00E+00	1.00E-02	5.00E+04	0.00E+00
Cyanide	100	4.00E-01	2.00E-05	5.00E-01	4.00E-04
Di-n-butyl phthalate	10	1.00E+00	2.00E-03	5.00E+03	1.00E+02
Dibenz(a,h)anthracene	10000	1.00E+00	2.00E-09	5.00E+04	1.00E+00
Diethyl phthalate	1	1.00E+00	1.00E-02	5.00E+02	5.00E+00
Fluorene	100	1.00E+00	2.00E-03	5.00E+03	1.00E+03
Hexachlorobenzene	1000	1.00E+00	2.00E-07	5.00E+03	1.00E+00
Hexachlorocyclohexane, alpha-	10000	1.00E+00	2.00E-03	5.00E+02	1.00E+04
Hexachlorocyclohexane, beta-	100	1.00E+00	2.00E-05	5.00E+02	1.00E+00
Hexachlorocyclohexane, delta-	1	1.00E+00	2.00E-03	5.00E+00	1.00E-02
Indeno(1,2,3-CD)pyrene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00
Iron	0	1.00E+00	1.00E-02	5.00E-01	0.00E+00
Lead	10000	1.00E+00	2.00E-05	5.00E+01	1.00E+01
Lindane	10000	1.00E+00	2.00E-05	5.00E+02	1.00E+02
Magnesium	0	1.00E+00	2.00E-05	5.00E-01	0.00E+00
Manganese	10000	1.00E+00	1.00E-02	5.00E-01	5.00E+01
Mercury	10000	1.00E+00	2.00E-05	5.00E+04	1.00E+04
Naphthalene	100	4.00E-01	2.00E-03	5.00E+02	4.00E+01
Nickel	10000	1.00E+00	2.00E-05	5.00E-01	1.00E-01
Phenanthrene	0	4.00E-01	2.00E-05	5.00E+01	0.00E+00
Pyrene	100	1.00E+00	2.00E-09	5.00E+01	1.00E-05
Selenium	100	1.00E+00	1.00E-02	5.00E+03	5.00E+03
Silver	100	1.00E+00	2.00E-07	5.00E+01	1.00E-03
Sodium	0	1.00E+00	1.00E-02	5.00E-01	0.00E+00
Zinc	10	1.00E+00	2.00E-03	5.00E+02	1.00E+01

SW PATHWAY: GW TO SW COMPONENT HUMAM FOOD CHAIN THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

## Hazardous Substances Found in an Observed Release

Observed Release Hazardous Substance	Toxicity Value	Persist. Value	Bio- accum.	Toxicity/ Persistence Bioaccum.	Value
- N/A and/or data not specified					

DO NOT RELY ON THIS STATE OF THE INFORMATION AS A STATEMENT OF THE OPINION OF THE AUTHOR.  
THIS IS AN INFORMATION REPORT.

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SW PATHWAY: GW TO SW COMPONENT HUMAM FOOD CHAIN THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

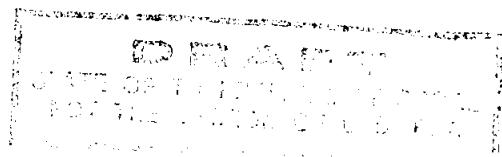
Toxicity/Mobility/Persistence/Bioaccumulation Value from Source Hazardous Substances:	1.00E+07
Toxicity/Mobility/Persistence/Bioaccumulation Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Mobility/Persistence/Bioaccumulation Factor:	1.00E+07
Sum of Source Hazardous Waste Quantity Values:	4.12E+02
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	180

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified



Most Distant Level I Sample

- 
- N/A and/or data not specified

Most Distant Level II Sample

- 
- N/A and/or data not specified

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SW PATHWAY: GW TO SW COMPONENT HUMAN FOOD CHAIN THREAT TARGETS  
Landes Company - 04/14/94

Level I Concentrations

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Fishery	Annual Production (pounds)	Human Food Chain Population Value
- N/A and/or data not specified		

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Sum of Human Food Chain Population Values: 0.00E+00

Level I Concentrations Factor: 0.00E+00

U.S. Environmental Protection Agency  
USEPA  
U.S. DEPARTMENT OF ENERGY  
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Level II Concentrations

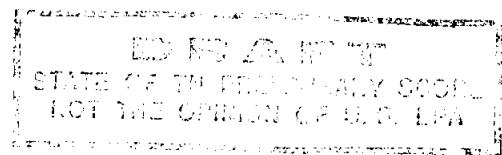
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Fishery	Annual Production (pounds)	Human Food Chain Population Value
- N/A and/or data not specified		

---

Sum of Human Food Chain Population Values: 0.00E+00

Level II Concentrations Factor: 0.00E+00



Potential Contamination

Fishery	Annual Production (pounds)	Type of Surface Water Body	Average Annual Flow (cfs)	Pop. Value (Pi)	Dilution Weight (Di)	Pi*Di
2 Tennessee River	310.0	River	36650	0.3	0.00E+00	0.00E+00

=====

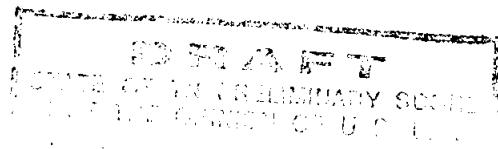
Sum of (Pi\*Di): 0.00E+00

Potential Human Food Chain Contamination Factor: 0.00E+00

Documentation for Chattanooga Creek Fishery:

The annual production of human food chain organisms from Chattanooga Creek is not known. It is assumed to be less than 100 lbs. a year.

Reference: 24-26,31,37,55



Documentation for Tennessee River Fishery:

The annual production figure is based on information supplied by the Tennessee Wildlife Resources Agency.

Reference: 25,55

Food Chain Individual

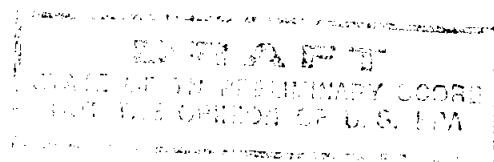
Location of Nearest Fishery: Tennessee River  
Distance from the Probable Point of Entry: 5.25 miles  
Type of Surface Water Body: River  
Dilution Weight: 0.0000000  
Level of Contamination: Potential

Food Chain Individual Factor: 20.00

Documentation for Tennessee River:

The Tennessee River starts at segment mile 5.25 and continues downstream for the remaining 9.75 miles of the Landes Company downstream segment. The flow rate is based on reference material.

Reference: 24,47



SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

Source: 1 contaminated soil

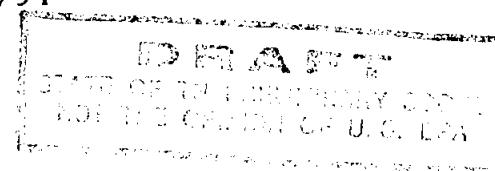
Source Hazardous Waste Quantity Value: 0.44

Hazardous Substance	Eco-toxicity Value	Persist. Value	Mob. Value	Bio-accum. Value	Persistence/Bioaccum. Value	Ecotoxicity/Mobility/Persistence/Bioaccum. Value
Acenaphthene	10000	4.00E-01	2.00E-03	5.00E+02	4.00E+03	
Arsenic	10	1.00E+00	1.00E-02	5.00E+01	5.00E+00	
Benzo(g,h,i)perylene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00	
Benzo(j,k)fluorene	10000	1.00E+00	2.00E-07	5.00E+03	1.00E+01	
Benzo(k)fluoranthene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00	
Benzofluoranthene, 3,4-	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00	
Bis (2-ethylhexyl) phthalate	1000	1.00E+00	2.00E-07	5.00E+04	1.00E+01	
Cadmium	1000	1.00E+00	2.00E-01	5.00E+03	1.00E+06	
Chloro-3-methylphenol, 4-	100	1.00E+00	1.00E-02	5.00E+01	5.00E+01	
Chromium	10000	1.00E+00	1.00E-02	5.00E+00	5.00E+02	
Chrysene	1000	1.00E+00	2.00E-09	5.00E+03	1.00E-02	
Cobalt	0	1.00E+00	1.00E-02	5.00E+03	0.00E+00	
Copper	100	1.00E+00	1.00E-02	5.00E+04	5.00E+04	
Cyanide	1000	4.00E-01	2.00E-05	5.00E-01	4.00E-03	
Dibenz(a,h)anthracene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00	
Dieldrin	10000	1.00E+00	2.00E-07	5.00E+04	1.00E+02	
Fluorene	1000	1.00E+00	2.00E-03	5.00E+03	1.00E+04	
Heptachlor	10000	1.00E+00	2.00E-05	5.00E+04	1.00E+04	
Hexachlorobenzene	10	1.00E+00	2.00E-07	5.00E+04	1.00E-01	
Hexachlorocyclohexane, alpha-	100	1.00E+00	2.00E-03	5.00E+02	1.00E+02	
Hexachlorocyclohexane, beta-	0	1.00E+00	2.00E-05	5.00E+02	0.00E+00	
Hexachlorocyclohexane, delta-	0	1.00E+00	2.00E-03	5.00E+00	0.00E+00	
Indeno(1,2,3-CD)pyrene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00	
Iron	10	1.00E+00	1.00E-02	5.00E-01	5.00E-02	
Lead	1000	1.00E+00	2.00E-05	5.00E+03	1.00E+02	
Lindane	10000	1.00E+00	2.00E-05	5.00E+02	1.00E+02	
Manganese	0	1.00E+00	1.00E-02	5.00E+04	0.00E+00	
Mercury	10000	1.00E+00	2.00E-05	5.00E+04	1.00E+04	
Naphthalene	1000	4.00E-01	2.00E-03	5.00E+02	4.00E+02	
Nickel	10	1.00E+00	2.00E-05	5.00E+02	1.00E-01	
Phenanthrene	1000	4.00E-01	2.00E-05	5.00E+03	4.00E+01	
Phenol	10000	1.00E+00	1.00E+00	5.00E+00	5.00E+04	
Pyrene	0	1.00E+00	2.00E-09	5.00E+01	0.00E+00	
Sodium	0	1.00E+00	1.00E-02	5.00E-01	0.00E+00	
Toluene	100	4.00E-01	1.00E-02	5.00E+01	2.00E+01	
Trichlorophenol, 2,4,6-	1000	1.00E+00	1.00E+00	5.00E+04	5.00E+07	
Zinc	10	1.00E+00	2.00E-03	5.00E+02	1.00E+01	

SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

Source: 2 waste piles

Source Hazardous Waste Quantity Value: 412.00



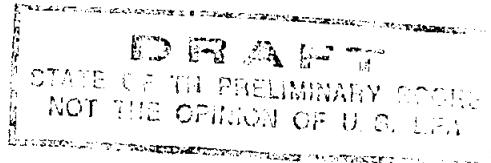
Hazardous Substance	Eco-toxicity Value	Persist. Value	Mob. Value	Bio-accum. Value	Ecotoxicity/Mobility/Persistence/Bioaccum. Value
Acenaphthene	10000	4.00E-01	2.00E-03	5.00E+02	4.00E+03
Acenaphthylene	0	1.00E+00	2.00E-03	5.00E+02	0.00E+00
Aluminum	10	1.00E+00	2.00E-05	5.00E+02	1.00E-01
Anthracene	10000	4.00E-01	2.00E-07	5.00E+03	4.00E+00
Arsenic	10	1.00E+00	1.00E-02	5.00E+01	5.00E+00
Barium	1	1.00E+00	1.00E-02	5.00E-01	5.00E-03
Benz(a)anthracene	10000	1.00E+00	2.00E-09	5.00E+04	1.00E+00
Benzo(a)pyrene	10000	1.00E+00	2.00E-09	5.00E+04	1.00E+00
Benzo(g,h,i)perylene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00
Benzofluoranthene, 3,4-	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00
Bis (2-ethylhexyl) phthalate	1000	1.00E+00	2.00E-07	5.00E+04	1.00E+01
Cadmium	1000	1.00E+00	2.00E-01	5.00E+03	1.00E+06
Chromium	10000	1.00E+00	1.00E-02	5.00E+00	5.00E+02
Chrysene	1000	1.00E+00	2.00E-09	5.00E+03	1.00E-02
Cobalt	0	1.00E+00	1.00E-02	5.00E+03	0.00E+00
Copper	100	1.00E+00	1.00E-02	5.00E+04	5.00E+04
Cyanide	1000	4.00E-01	2.00E-05	5.00E-01	4.00E-03
Di-n-butyl phthalate	1000	1.00E+00	2.00E-03	5.00E+03	1.00E+04
Dibenz(a,h)anthracene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00
Diethyl phthalate	10000	1.00E+00	1.00E-02	5.00E+02	5.00E+04
Fluorene	1000	1.00E+00	2.00E-03	5.00E+03	1.00E+04
Hexachlorobenzene	10	1.00E+00	2.00E-07	5.00E+04	1.00E-01
Hexachlorocyclohexane, alpha-	100	1.00E+00	2.00E-03	5.00E+02	1.00E+02
Hexachlorocyclohexane, beta-	0	1.00E+00	2.00E-05	5.00E+02	0.00E+00
Hexachlorocyclohexane, delta-	0	1.00E+00	2.00E-03	5.00E+00	0.00E+00
Indeno(1,2,3-CD)pyrene	0	1.00E+00	2.00E-09	5.00E+04	0.00E+00
Iron	10	1.00E+00	1.00E-02	5.00E-01	5.00E-02
Lead	1000	1.00E+00	2.00E-05	5.00E+03	1.00E+02
Lindane	10000	1.00E+00	2.00E-05	5.00E+02	1.00E+02
Magnesium	0	1.00E+00	2.00E-05	5.00E-01	0.00E+00
Manganese	0	1.00E+00	1.00E-02	5.00E+04	0.00E+00
Mercury	10000	1.00E+00	2.00E-05	5.00E+04	1.00E+04
Naphthalene	1000	4.00E-01	2.00E-03	5.00E+02	4.00E+02
Nickel	10	1.00E+00	2.00E-05	5.00E+02	1.00E-01
Phenanthrene	1000	4.00E-01	2.00E-05	5.00E+03	4.00E+01
Pyrene	0	1.00E+00	2.00E-09	5.00E+01	0.00E+00
Selenium	100	1.00E+00	1.00E-02	5.00E+03	5.00E+03
Silver	10000	1.00E+00	2.00E-07	5.00E+01	1.00E-01
Sodium	0	1.00E+00	1.00E-02	5.00E-01	0.00E+00
Zinc	10	1.00E+00	2.00E-03	5.00E+02	1.00E+01

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SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94



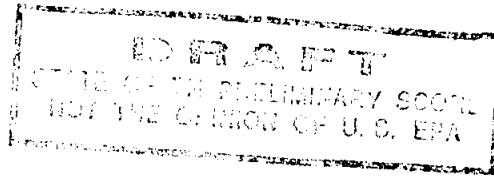
Hazardous Substances Found in an Observed Release

Observed Release Hazardous Substance	Eco-toxicity Value	Persist. Value	Bio-accum.	Ecotoxicity/Persistence/Bioaccum. Value
- N/A and/or data not specified				



PREscore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 98  
SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

Ecotoxicity/Mobility/Persistence/Bioaccumulation Value from Source Substances:	5.00E+07
Ecotoxicity/Mobility/Persistence/Bioaccumulation Value from Observed Hazardous Substances:	0.00E+00
Ecotoxicity/Mobility/Persistence/Bioaccumulation Factor:	5.00E+07
Sum of Source Hazardous Waste Quantity Values:	4.12E+02
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	180

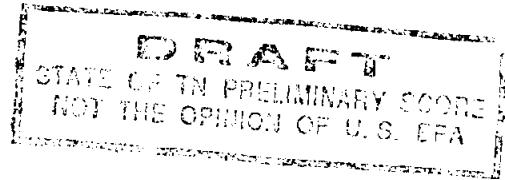


Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified



Most Distant Level I Sample

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- N/A and/or data not specified

Most Distant Level II Sample

-----

- N/A and/or data not specified

PREScore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 100  
SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT TARGETS  
Landes Company - 04/14/94

Level I Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value
- N/A and/or data not specified		

Sum of Sensitive Environments Values: 0

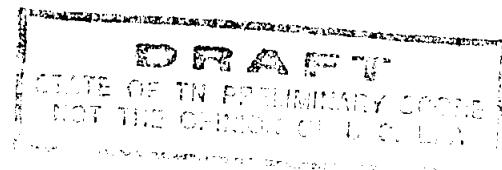
Wetlands

Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)
- N/A and/or data not specified		

Total Wetlands Frontage: 0.00 Miles Total Wetlands Value: 0

=====  
Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00

Level I Concentrations Factor: 0.00E+00



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SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT TARGETS  
Landes Company - 04/14/94

Level II Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value
- N/A and/or data not specified		

Sum of Sensitive Environments Values: 0

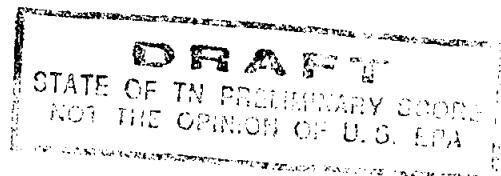
Wetlands

Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)
- N/A and/or data not specified		

Total Wetlands Frontage: 0.00 Miles Total Wetlands Value: 0

=====  
Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00

Level II Concentrations Factor: 0.00E+00



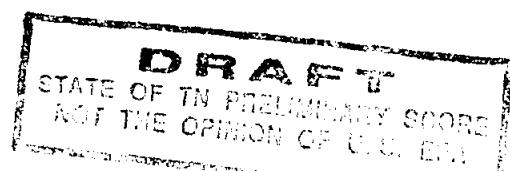
Potential Contamination

Sensitive Environments

Type of Surface Water Body	Sensitive Environment	Sensitive Environment Value
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Wetlands

Type of Surface Water Body	Sensitive Environment	Wetlands Frontage	Wetlands Value
River	1 wetland	0.50	25



Documentation for Sensitive Environment wetland:

A small wetland borders the southeast corner of the site. The frontage length is an estimate based on the site topographic map. The probable point of entry for the wetland is 50 to 100 feet from defined soil and waste pile contamination.

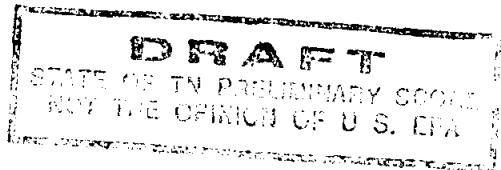
Reference: 29,47,50-52

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SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT TARGETS  
Landes Company - 04/14/94

Type of Surface Water Body	Sum of Sens. Environment Values(Sj)	Wetland Frontage Values(Wj)	Dilution Weight (Dj)	Sum of Dj(Wj+Sj) Dj(Wj+Sj)
Moderate to Large Stream	0	25	0.00E+00	0.00E+00

Sum of Dj(Wj+Sj): 0.00E+00  
Sum of Dj(Wj+Sj)/10: 0.00E+00

Potential Contamination Sensitive Environment Factor: 0.00E+00



Likelihood of Exposure

No.	Source ID	Level of Contamination
1	contaminated soil	Level I
2	waste piles	Level I
Likelihood of Exposure Factor:		550

DO NOT USE THIS STATE OF TN PRELIMINARY SCORE  
NOT THE OPINION OF U.S. EPA

Documentation for Area of Contamination, Source contaminated soil:

The area of the contaminated soil source is an estimate based on the approximate distance between soil samples LC-SS-02, LC-SS-04, LC-SS-05, and LC-SS-06. The estimated distance between LC-SS-02 and LC-SS-04 is approximately 150 feet. The estimated distance between LC-SS-04 and LC-SS-05 is approximately 200 feet. The estimated distance between LC-SS-02 and LC-SS-05 is approximately 200 feet. This roughly equates to a triangular area of approximately 15,000 square feet.

Reference: 50,51,52

Documentation for Area of Contamination, Source waste piles:

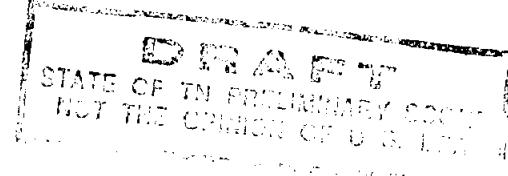
The waste pile volume consists of several separate, adjacent piles; one that is approximately 12 feet high, 30 feet wide, and 150 feet long and several others that, when combined, occupy a volume approximately 20 feet by 20 feet by 2 feet thick. This equates to approximately 27,800 cubic feet or 1,030 cubic yards.

Reference: 21,22,27-29,52

Source Hazardous Substance No.	Depth (ft.)	Concent.	Cancer	RFD	Units
1 Acenaphthene	< 2	0.0E+00	0.0E+00	3.5E+04	ppm
1 Arsenic	< 2	6.3E+01	3.3E-01	1.7E+02	ppm
1 Benzo(g,h,i)perylene	< 2	1.3E+01	0.0E+00	0.0E+00	ppm
1 Benzo(j,k)fluorene	< 2	3.3E+01	0.0E+00	2.3E+04	ppm

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 SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT LIKELIHOOD OF EXPOSURE  
 Landes Company - 04/14/94

1	Benzo(k)fluoranthene	< 2	7.9E+03	0.0E+00	0.0E+00	ppm
1	Benzofluoranthene, 3,4-	< 2	3.7E+04	0.0E+00	0.0E+00	ppm
1	Bis (2-ethylhexyl) phthalate	< 2	1.0E+05	4.2E+01	1.2E+04	ppm
1	Cadmium	< 2	1.2E+01	0.0E+00	2.9E+02	ppm
1	Chloro-3-methylphenol, 4-	< 2	0.0E+00	0.0E+00	1.2E+06	ppm
1	Chromium	< 2	1.6E+02	0.0E+00	2.9E+03	ppm
1	Chrysene	< 2	2.9E+04	0.0E+00	0.0E+00	ppm
1	Cobalt	< 2	3.1E+01	0.0E+00	0.0E+00	ppm
1	Copper	< 2	2.9E+02	0.0E+00	0.0E+00	ppm
1	Cyanide	< 2	4.6E+02	0.0E+00	1.2E+04	ppm
1	Dibenz(a,h)anthracene	< 2	8.8E+03	0.0E+00	0.0E+00	ppm
1	Dieldrin	< 2	0.0E+00	3.6E-02	2.9E+01	ppm
1	Fluorene	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Heptachlor	< 2	0.0E+00	1.3E-01	2.9E+02	ppm
1	Hexachlorobenzene	< 2	0.0E+00	3.6E-01	4.7E+02	ppm
1	Hexachlorocyclohexane, alpha-	< 2	3.0E+02	9.3E-02	0.0E+00	ppm
1	Hexachlorocyclohexane, beta-	< 2	5.4E+02	3.2E-01	0.0E+00	ppm
1	Hexachlorocyclohexane, delta-	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Indeno(1,2,3-CD)pyrene	< 2	1.9E+04	0.0E+00	0.0E+00	ppm
1	Iron	< 2	4.0E+05	0.0E+00	0.0E+00	ppm
1	Lead	< 2	4.0E+02	0.0E+00	0.0E+00	ppm
1	Lindane	< 2	1.0E+02	4.5E-01	1.7E+02	ppm
1	Manganese	< 2	4.9E+03	0.0E+00	5.8E+04	ppm
1	Mercury	< 2	9.3E-01	0.0E+00	1.7E+02	ppm
1	Naphthalene	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Nickel	< 2	1.8E+02	0.0E+00	1.2E+04	ppm
1	Phenanthrene	< 2	1.1E+04	0.0E+00	0.0E+00	ppm
1	Phenol	< 2	0.0E+00	0.0E+00	3.5E+05	ppm
1	Pyrene	< 2	3.2E+04	0.0E+00	1.7E+04	ppm
1	Sodium	< 2	2.8E+03	0.0E+00	0.0E+00	ppm
1	Toluene	< 2	0.0E+00	0.0E+00	1.2E+05	ppm
1	Trichlorophenol, 2,4,6-	< 2	0.0E+00	5.3E+01	0.0E+00	ppm
1	Zinc	< 2	5.6E+02	0.0E+00	1.7E+05	ppm
2	Acenaphthene	< 2	0.0E+00	0.0E+00	3.5E+04	ppm
2	Acenaphthylene	< 2	1.1E+04	0.0E+00	0.0E+00	ppm
2	Aluminum	< 2	1.9E+05	0.0E+00	0.0E+00	ppm
2	Anthracene	< 2	1.6E+04	0.0E+00	1.7E+05	ppm
2	Arsenic	< 2	2.8E+01	3.3E-01	1.7E+02	ppm
2	Barium	< 2	2.0E+02	0.0E+00	4.1E+04	ppm
2	Benz(a)anthracene	< 2	4.4E+04	0.0E+00	0.0E+00	ppm
2	Benzo(a)pyrene	< 2	4.1E+04	8.0E-02	0.0E+00	ppm
2	Benzo(g,h,i)perylene	< 2	2.7E+04	0.0E+00	0.0E+00	ppm
2	Benzofluoranthene, 3,4-	< 2	9.4E+04	0.0E+00	0.0E+00	ppm
2	Bis (2-ethylhexyl) phthalate	< 2	3.2E+04	4.2E+01	1.2E+04	ppm
2	Cadmium	< 2	4.2E+01	0.0E+00	2.9E+02	ppm
2	Chromium	< 2	1.9E+02	0.0E+00	2.9E+03	ppm
2	Chrysene	< 2	5.1E+04	0.0E+00	0.0E+00	ppm
2	Cobalt	< 2	3.2E+01	0.0E+00	0.0E+00	ppm
2	Copper	< 2	1.3E+04	0.0E+00	0.0E+00	ppm
2	Cyanide	< 2	2.5E+03	0.0E+00	1.2E+04	ppm
2	Di-n-butyl phthalate	< 2	0.0E+00	0.0E+00	5.8E+04	ppm



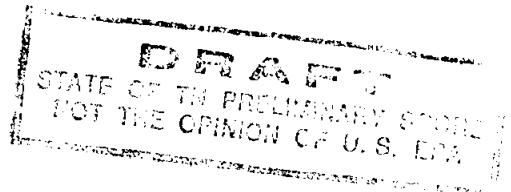
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 SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT LIKELIHOOD OF EXPOSURE  
 Landes Company - 04/14/94

2	Dibenz(a,h)anthracene	< 2	1.1E+04	0.0E+00	0.0E+00	ppm
2	Diethyl phthalate	< 2	0.0E+00	0.0E+00	4.7E+05	ppm
2	Fluorene	< 2	0.0E+00	0.0E+00	2.3E+04	ppm
2	Hexachlorobenzene	< 2	1.1E+02	3.6E-01	4.7E+02	ppm
2	Hexachlorocyclohexane, alpha-	< 2	1.7E+03	9.3E-02	0.0E+00	ppm
2	Hexachlorocyclohexane, beta-	< 2	1.6E+03	3.2E-01	0.0E+00	ppm
2	Hexachlorocyclohexane, delta-	< 2	2.9E+02	0.0E+00	0.0E+00	ppm
2	Indeno(1,2,3-CD)pyrene	< 2	3.0E+04	0.0E+00	0.0E+00	ppm
2	Iron	< 2	5.3E+04	0.0E+00	0.0E+00	ppm
2	Lead	< 2	4.2E+03	0.0E+00	0.0E+00	ppm
2	Lindane	< 2	2.9E+02	4.5E-01	1.7E+02	ppm
2	Magnesium	< 2	4.2E+03	0.0E+00	0.0E+00	ppm
2	Manganese	< 2	1.4E+03	0.0E+00	5.8E+04	ppm
2	Mercury	< 2	8.9E-01	0.0E+00	1.7E+02	ppm
2	Naphthalene	< 2	8.4E+03	0.0E+00	2.3E+04	ppm
2	Nickel	< 2	7.1E+02	0.0E+00	1.2E+04	ppm
2	Phenanthrene	< 2	2.6E+04	0.0E+00	0.0E+00	ppm
2	Pyrene	< 2	7.8E+04	0.0E+00	1.7E+04	ppm
2	Selenium	< 2	3.1E+00	0.0E+00	2.9E+03	ppm
2	Silver	< 2	2.8E+01	0.0E+00	2.9E+03	ppm
2	Sodium	< 2	2.2E+02	0.0E+00	0.0E+00	ppm
2	Zinc	< 2	1.4E+04	0.0E+00	1.7E+05	ppm

Documentation for Source contaminated soil, Contaminants:

The hazardous substances attributed to the soil samples are identified in the SI analytical data for the Landes Company site. The times and locations of soil sample collection are as documented in the appropriate references as are background levels.

Reference: 50,51,52



Documentation for Source waste piles, Contaminants:

The substances attributed to the waste pile source were identified by analysis of waste pile samples collected during SI sampling activities on February 7th and 8th, 1994.

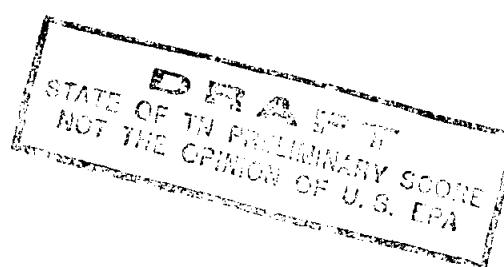
Reference: 52

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 SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

Source: 1 contaminated soil

Source Hazardous Waste Quantity Value: 0.44

Hazardous Substance	Toxicity Value
Acenaphthene	10
Arsenic	10000
Benzo(g,h,i)perylene	0
Benzo(j,k)fluorene	100
Benzo(k)fluoranthene	0
Benzofluoranthene, 3,4-	10000
Bis (2-ethylhexyl) phthalate	100
Cadmium	10000
Chloro-3-methylphenol, 4-	1
Chromium	10000
Chrysene	0
Cobalt	1
Copper	0
Cyanide	100
Dibenz(a,h)anthracene	10000
Dieldrin	10000
Fluorene	100
Heptachlor	1000
Hexachlorobenzene	1000
Hexachlorocyclohexane, alpha-	10000
Hexachlorocyclohexane, beta-	100
Hexachlorocyclohexane, delta-	1
Indeno(1,2,3-CD)pyrene	0
Iron	0
Lead	10000
Lindane	10000
Manganese	10000
Mercury	10000
Naphthalene	100
Nickel	10000
Phenanthrene	0
Phenol	1
Pyrene	100
Sodium	0
Toluene	10
Trichlorophenol, 2,4,6-	10
Zinc	10

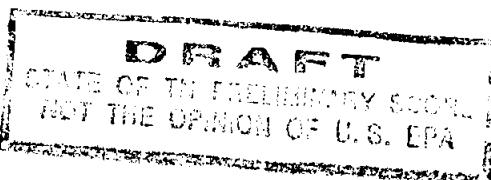


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SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

Source: 2 waste piles

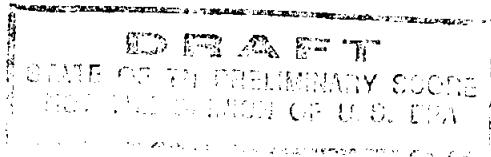
Source Hazardous Waste Quantity Value: 0.00

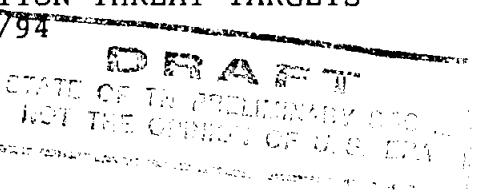
Hazardous Substance	Toxicity Value
Acenaphthene	10
Acenaphthylene	0
Aluminum	0
Anthracene	10
Arsenic	10000
Barium	10
Benz(a)anthracene	1000
Benzo(a)pyrene	10000
Benzo(g,h,i)perylene	0
Benzofluoranthene, 3,4-	10000
Bis (2-ethylhexyl) phthalate	100
Cadmium	10000
Chromium	10000
Chrysene	0
Cobalt	1
Copper	0
Cyanide	100
Di-n-butyl phthalate	10
Dibenz(a,h)anthracene	10000
Diethyl phthalate	1
Fluorene	100
Hexachlorobenzene	1000
Hexachlorocyclohexane, alpha-	10000
Hexachlorocyclohexane, beta-	100
Hexachlorocyclohexane, delta-	1
Indeno(1,2,3-CD)pyrene	0
Iron	0
Lead	10000
Lindane	10000
Magnesium	0
Manganese	10000
Mercury	10000
Naphthalene	100
Nickel	10000
Phenanthrene	0
Pyrene	100
Selenium	100
Silver	100
Sodium	0
Zinc	10



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SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

Toxicity Factor: 1.00E+04  
Sum of Source Hazardous Waste Quantity Values: 4.41E-01  
Hazardous Waste Quantity Factor: 10  
Waste Characteristics Factor Category: 18





Targets

-----  
Level I Population: 0.0 Value: 0.00

Documentation for Level I Population:

There are no residents living on areas of Level 1 observed contamination at the site and there are no off-site residents either living on areas of observed Level 1 contamination or on areas within 200 feet of that contamination. There are also no students attending schools and no daycare attendies on areas within 200 feet of the areas of known Level 1 observed contamination.

Reference: 29,52

Level II Population: 0.0 Value: 0.00

Documentation for Level II Population:

There are no residents living on or within 200 feet of Level 2 observed contamination at the site and there are no off-site residents living on areas of Level 2 observed contamination or on areas within 200 feet of that contamination. There are also no students attending schools and no daycare attendies on areas within 200 feet of Level 2 observed contamination.

Reference: 29,52

Workers: 5.0 Value: 5.00

Documentation for Workers:

This is an estimate based on site observations and analytical data.

Reference: 29,52

Resident Individual: Potentia Value: 0.00

Resources: NO Value: 0.00

Documentation for Resources:

No resources identified.

Reference: 29

Terrestrial Sensitive Environment	Value
- N/A and/or data not specified	

Terrestrial Sensitive Environments Factor: 0.00

Documentation for Terrestrial Environment N/A:

There are no known terrestrial sensitive environments on the site.

Reference: 14,41,55

Likelihood of Exposure

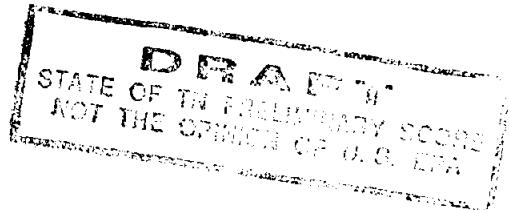
No.	Source ID	Level of Contamination	Attractiveness/ Accessibility	Area of Contam. (sq. feet)
1	contaminated soil	Level I	10	15000
2	waste piles	Level I	10	1030

Highest Attractiveness/Accessibility Value: 10

Sum of Eligible Areas Of Contamination (sq. feet): 16030

Area of Contamination Value: 20

Likelihood of Exposure Factor Category: 5



Documentation for Attractiveness/Accessibility, Source contaminated soil:

Approximately half of the contaminated soil source is easily accessible to nearby residents (that portion within the sandblasting area at the southeast corner of the site). The other half of the contaminated soil source area is not (that portion within the fenced area). Neither area has any significant aesthetic or recreational value.

Reference: 27-29,52

Documentation for Attractiveness/Accessibility, Source waste piles:

The waste pile source is easily accessible to the nearby residents in the area. However, the waste pile area has no significant aesthetic or recreational value.

Reference: 27-29,55

Source Hazardous Substance No.		Depth (ft.)	Concent.	Cancer	RFD	Units
1	Acenaphthene	< 2	0.0E+00	0.0E+00	3.5E+04	ppm
1	Arsenic	< 2	6.3E+01	3.3E-01	1.7E+02	ppm
1	Benzo(g,h,i)perylene	< 2	1.3E+01	0.0E+00	0.0E+00	ppm

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 SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT LIKELIHOOD OF EXPOSURE  
 Landes Company - 04/14/94

1	Benzo(j,k)fluorene	< 2	3.3E+01	0.0E+00	2.3E+04	ppm
1	Benzo(k)fluoranthene	< 2	7.9E+03	0.0E+00	0.0E+00	ppm
1	Benzofluoranthene, 3,4-	< 2	3.7E+04	0.0E+00	0.0E+00	ppm
1	Bis (2-ethylhexyl) phthalate	< 2	1.0E+05	4.2E+01	1.2E+04	ppm
1	Cadmium	< 2	1.2E+01	0.0E+00	2.9E+02	ppm
1	Chloro-3-methylphenol, 4-	< 2	0.0E+00	0.0E+00	1.2E+06	ppm
1	Chromium	< 2	1.6E+02	0.0E+00	2.9E+03	ppm
1	Chrysene	< 2	2.9E+04	0.0E+00	0.0E+00	ppm
1	Cobalt	< 2	3.1E+01	0.0E+00	0.0E+00	ppm
1	Copper	< 2	2.9E+02	0.0E+00	0.0E+00	ppm
1	Cyanide	< 2	4.6E+02	0.0E+00	1.2E+04	ppm
1	Dibenz(a,h)anthracene	< 2	8.8E+03	0.0E+00	0.0E+00	ppm
1	Dieldrin	< 2	0.0E+00	3.6E-02	2.9E+01	ppm
1	Fluorene	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Heptachlor	< 2	0.0E+00	1.3E-01	2.9E+02	ppm
1	Hexachlorobenzene	< 2	0.0E+00	3.6E-01	4.7E+02	ppm
1	Hexachlorocyclohexane, alpha-	< 2	3.0E+02	9.3E-02	0.0E+00	ppm
1	Hexachlorocyclohexane, beta-	< 2	5.4E+02	3.2E-01	0.0E+00	ppm
1	Hexachlorocyclohexane, delta-	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Indeno(1,2,3-CD)pyrene	< 2	1.9E+04	0.0E+00	0.0E+00	ppm
1	Iron	< 2	4.0E+05	0.0E+00	0.0E+00	ppm
1	Lead	< 2	4.0E+02	0.0E+00	0.0E+00	ppm
1	Lindane	< 2	1.0E+02	4.5E-01	1.7E+02	ppm
1	Manganese	< 2	4.9E+03	0.0E+00	5.8E+04	ppm
1	Mercury	< 2	9.3E-01	0.0E+00	1.7E+02	ppm
1	Naphthalene	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Nickel	< 2	1.8E+02	0.0E+00	1.2E+04	ppm
1	Phenanthrene	< 2	1.1E+04	0.0E+00	0.0E+00	ppm
1	Phenol	< 2	0.0E+00	0.0E+00	3.5E+05	ppm
1	Pyrene	< 2	3.2E+04	0.0E+00	1.7E+04	ppm
1	Sodium	< 2	2.8E+03	0.0E+00	0.0E+00	ppm
1	Toluene	< 2	0.0E+00	0.0E+00	1.2E+05	ppm
1	Trichlorophenol, 2,4,6-	< 2	0.0E+00	5.3E+01	0.0E+00	ppm
1	Zinc	< 2	5.6E+02	0.0E+00	1.7E+05	ppm
2	Acenaphthene	< 2	0.0E+00	0.0E+00	3.5E+04	ppm
2	Acenaphthylene	< 2	1.1E+04	0.0E+00	0.0E+00	ppm
2	Aluminum	< 2	1.9E+05	0.0E+00	0.0E+00	ppm
2	Anthracene	< 2	1.6E+04	0.0E+00	1.7E+05	ppm
2	Arsenic	< 2	2.8E+01	3.3E-01	1.7E+02	ppm
2	Barium	< 2	2.0E+02	0.0E+00	4.1E+04	ppm
2	Benz(a)anthracene	< 2	4.4E+04	0.0E+00	0.0E+00	ppm
2	Benzo(a)pyrene	< 2	4.1E+04	8.0E-02	0.0E+00	ppm
2	Benzo(g,h,i)perylene	< 2	2.7E+04	0.0E+00	0.0E+00	ppm
2	Benzofluoranthene, 3,4-	< 2	9.4E+04	0.0E+00	0.0E+00	ppm
2	Bis (2-ethylhexyl) phthalate	< 2	3.2E+04	4.2E+01	1.2E+04	ppm
2	Cadmium	< 2	4.2E+01	0.0E+00	2.9E+02	ppm
2	Chromium	< 2	1.9E+02	0.0E+00	2.9E+03	ppm
2	Chrysene	< 2	5.1E+04	0.0E+00	0.0E+00	ppm
2	Cobalt	< 2	3.2E+01	0.0E+00	0.0E+00	ppm
2	Copper	< 2	1.3E+04	0.0E+00	0.0E+00	ppm
2	Cyanide	< 2	2.5E+03	0.0E+00	1.2E+04	ppm

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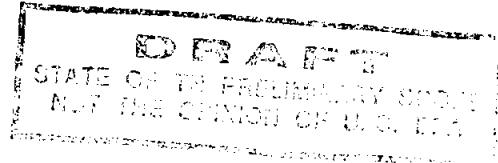
PREScore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 114  
 SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT LIKELIHOOD OF EXPOSURE  
 Landes Company - 04/14/94

2	Di-n-butyl phthalate	< 2	0.0E+00	0.0E+00	5.8E+04	ppm
2	Dibenz(a,h)anthracene	< 2	1.1E+04	0.0E+00	0.0E+00	ppm
2	Diethyl phthalate	< 2	0.0E+00	0.0E+00	4.7E+05	ppm
2	Fluorene	< 2	0.0E+00	0.0E+00	2.3E+04	ppm
2	Hexachlorobenzene	< 2	1.1E+02	3.6E-01	4.7E+02	ppm
2	Hexachlorocyclohexane, alpha-	< 2	1.7E+03	9.3E-02	0.0E+00	ppm
2	Hexachlorocyclohexane, beta-	< 2	1.6E+03	3.2E-01	0.0E+00	ppm
2	Hexachlorocyclohexane, delta-	< 2	2.9E+02	0.0E+00	0.0E+00	ppm
2	Indeno(1,2,3-CD)pyrene	< 2	3.0E+04	0.0E+00	0.0E+00	ppm
2	Iron	< 2	5.3E+04	0.0E+00	0.0E+00	ppm
2	Lead	< 2	4.2E+03	0.0E+00	0.0E+00	ppm
2	Lindane	< 2	2.9E+02	4.5E-01	1.7E+02	ppm
2	Magnesium	< 2	4.2E+03	0.0E+00	0.0E+00	ppm
2	Manganese	< 2	1.4E+03	0.0E+00	5.8E+04	ppm
2	Mercury	< 2	8.9E-01	0.0E+00	1.7E+02	ppm
2	Naphthalene	< 2	8.4E+03	0.0E+00	2.3E+04	ppm
2	Nickel	< 2	7.1E+02	0.0E+00	1.2E+04	ppm
2	Phenanthrene	< 2	2.6E+04	0.0E+00	0.0E+00	ppm
2	Pyrene	< 2	7.8E+04	0.0E+00	1.7E+04	ppm
2	Selenium	< 2	3.1E+00	0.0E+00	2.9E+03	ppm
2	Silver	< 2	2.8E+01	0.0E+00	2.9E+03	ppm
2	Sodium	< 2	2.2E+02	0.0E+00	0.0E+00	ppm
2	Zinc	< 2	1.4E+04	0.0E+00	1.7E+05	ppm

Documentation for Source contaminated soil, Contaminants:

The hazardous substances attributed to the soil samples are identified in the SI analytical data for the Landes Company site. The times and locations of soil sample collection are as documented in the appropriate references as are background levels.

Reference: 50,51,52



Documentation for Source waste piles, Contaminants:

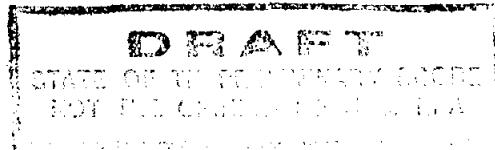
The substances attributed to the waste pile source were identified by analysis of waste pile samples collected during SI sampling activities on February 7th and 8th, 1994.

Reference: 52

Source: 1 contaminated soil

Source Hazardous Waste Quantity Value: 0.44

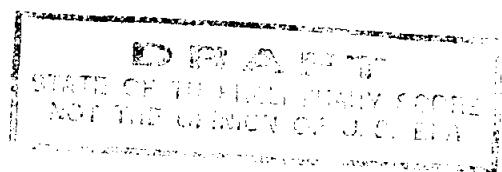
Hazardous Substance	Toxicity Value
Acenaphthene	10
Arsenic	10000
Benzog,h,i)perylene	0
Benzo(j,k)fluorene	100
Benzo(k)fluoranthene	0
Benzofluoranthene, 3,4-	10000
Bis (2-ethylhexyl) phthalate	100
Cadmium	10000
Chloro-3-methylphenol, 4-	1
Chromium	10000
Chrysene	0
Cobalt	1
Copper	0
Cyanide	100
Dibenz(a,h)anthracene	10000
Dieldrin	10000
Fluorene	100
Heptachlor	1000
Hexachlorobenzene	1000
Hexachlorocyclohexane, alpha-	10000
Hexachlorocyclohexane, beta-	100
Hexachlorocyclohexane, delta-	1
Indeno(1,2,3-CD)pyrene	0
Iron	0
Lead	10000
Lindane	10000
Manganese	10000
Mercury	10000
Naphthalene	100
Nickel	10000
Phenanthrene	0
Phenol	1
Pyrene	100
Sodium	0
Toluene	10
Trichlorophenol, 2,4,6-	10
Zinc	10



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 SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

Source: 2 waste piles

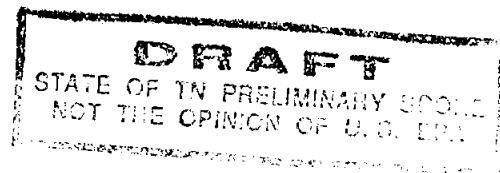
Source Hazardous Waste Quantity Value: 0.00



Hazardous Substance	Toxicity Value
Acenaphthene	10
Acenaphthylene	0
Aluminum	0
Anthracene	10
Arsenic	10000
Barium	10
Benz(a)anthracene	1000
Benzo(a)pyrene	10000
Benzo(g,h,i)perylene	0
Benzofluoranthene, 3,4-	10000
Bis (2-ethylhexyl) phthalate	100
Cadmium	10000
Chromium	10000
Chrysene	0
Cobalt	1
Copper	0
Cyanide	100
Di-n-butyl phthalate	10
Dibenz(a,h)anthracene	10000
Diethyl phthalate	1
Fluorene	100
Hexachlorobenzene	1000
Hexachlorocyclohexane, alpha-	10000
Hexachlorocyclohexane, beta-	100
Hexachlorocyclohexane, delta-	1
Indeno(1,2,3-CD)pyrene	0
Iron	0
Lead	10000
Lindane	10000
Magnesium	0
Manganese	10000
Mercury	10000
Naphthalene	100
Nickel	10000
Phenanthrene	0
Pyrene	100
Selenium	100
Silver	100
Sodium	0
Zinc	10

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SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT WASTE CHARACTERISTICS  
Landes Company - 04/14/94

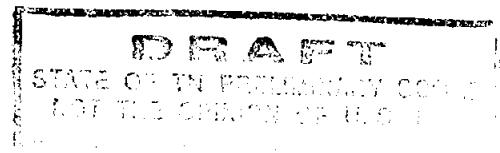
Toxicity Factor: 1.00E+04  
Sum of Source Hazardous Waste Quantity Values: 4.41E-01  
Hazardous Waste Quantity Factor: 10  
Waste Characteristics Factor Category: 18



Nearby Individual

Population within 1/4 mile: 624.0

Nearby Individual Value: 1.0



Population Within 1 Mile

Travel Distance Category	Number of People	Value
> 0 to 1/4 mile	624.0	1.3
> 1/4 to 1/2 mile	1876.0	2.0
> 1/2 to 1 mile	7501.0	3.3
Population Within 1 Mile Factor:		7.0

Documentation for Population > 0 to 1/4 mile Distance Category:

The populations entered for distance categories are estimates based on the estimated total population of 160,000 people living within the 4-mile site radius. The calculated population is developed from the formula for the area of the circle, Area =  $3.14 \times \text{Radius}^2$ .

Reference: 1,24,26

Documentation for Population > 1/4 to 1/2 mile Distance Category:

Populations are calculated as described for the 0 to 1/4 mile radius.

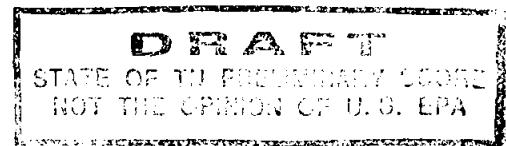
Reference:

PREScore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 119  
SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT TARGETS  
Landes Company - 04/14/94

Documentation for Population > 1/2 to 1 mile Distance Category:

Populations are calculated as described for the 0 to 1/4 mile radius.

Reference:



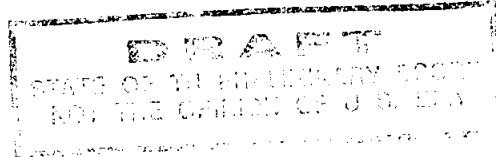
OBSERVED RELEASE

No. Sample ID	Distance (miles)	Level of Contamination
- N/A and/or data not specified		
=====		
Observed Release Factor: 0		

Documentation for Sample N/A:

Air samples were not collected for the SI.

Reference: 52

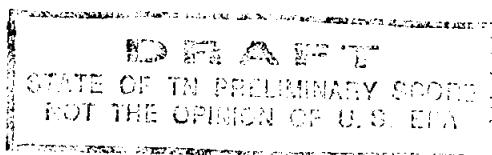


Gas Migration Potential

GAS POTENTIAL TO RELEASE

Source ID	Source Type	Gas	Gas	Gas	Gas Potential to Rel.
		Gas Contain.	Source Type	Migrtn. Potent.	
		Value (A)	Value (B)	Value (C)	Sum (B+C) Value A(B+C)
contaminated soil waste piles	Contaminated Soil Waste Pile	10 10	0 17	11 11	11 28 110 280

Gas Potential to Release Factor: 280



Documentation for Gas Containment, Source contaminated soil:

The gas containment factor value for the contaminated soil source is based on HRS tabel 6-3. The contaminated soil source meets all situations except those listed in the table.

Reference: 27-29,55

Documentation for Source Type, Source contaminated soil:

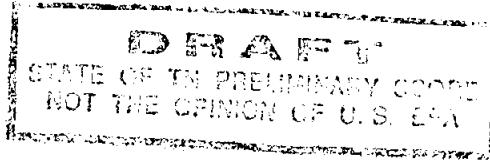
The source type is based on analytical data for soil samples collected at the site on February 7th and 8th, 1994.

Reference: 52

Documentation for Gas Containment, Source waste piles:

The gas containment factor value for the waste pile is based on HRS table 6-3. The waste pile meets all situations except those listed in the table.

Reference: 27-29,55



Documentation for Source Type, Source waste piles:

The source type was identified as a waste pile based on site reconnaissance and analytical data from SI sampling activities.

Reference: 27-29,52

Source: contaminated soil

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value
Acenaphthene	11
Benzo(j,k)fluorene	0
Benzo(k)fluoranthene	6
Benzofluoranthene, 3,4-	6
Bis (2-ethylhexyl) phthalate	6
Chloro-3-methylphenol, 4-	11
Chrysene	6
Dieldrin	6
Fluorene	11
Heptachlor	11
Hexachlorobenzene	11
Hexachlorocyclohexane, alpha-	11
Hexachlorocyclohexane, beta-	6
Hexachlorocyclohexane, delta-	6
Lindane	11
Mercury	11
Naphthalene	11
Phenanthrene	11
Phenol	11
Pyrene	6
Toluene	17
Trichlorophenol, 2,4,6-	11

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Average of Gas Migration Potential Value for 3 Hazardous Substances: 13.000

Gas Migration Potential Value From Table 6-7: 11

Source: waste piles

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value
Acenaphthene	11
Acenaphthylene	11
Anthracene	6
Benz(a)anthracene	6
Benzo(a)pyrene	6
Benzofluoranthene, 3,4-	6
Bis (2-ethylhexyl) phthalate	6
Chrysene	6
Di-n-butyl phthalate	6
Diethyl phthalate	11
Fluorene	11
Hexachlorobenzene	11
Hexachlorocyclohexane, alpha-	11
Hexachlorocyclohexane, beta-	6
Hexachlorocyclohexane, delta-	6
Lindane	11
Mercury	11
Naphthalene	11
Phenanthrene	11
Pyrene	6

Average of Gas Migration Potential Value for 3 Hazardous Substances: 11.000

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Gas Migration Potential Value From Table 6-7: 11

Particulate Migration Potential

PARTICULATE POTENTIAL TO RELEASE

Source ID	Source Type	Partic. Partic.			Partic.		
		Partic.	Source	Migrtn.	Contain.	Type	Potent.
		Value	Value	Value	Sum	Value	
		(A)	(B)	(C)	(B+C)	A(B+C)	
contaminated soil waste piles	Contaminated Soil Waste Pile	10 10	0 28	6 6	6 34	60 340	

Particulate Potential to Release Factor:

340

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Documentation for Particulate Containment, Source contaminated soil:

The particulate gas containment factor value for the contaminated soil source is based on HRS tabel 6-9. The contaminated soil source meets all situations except those listed in the table.

Reference: 27-29,55

Documentation for Source Type, Source contaminated soil:

The source type is based on analytical data for soil samples collected at the site on February 7th and 8th, 1994.

Reference: 52

Documentation for Particulate Containment, Source waste piles:

The particulate gas containment factor value for the waste pile source is based on HRS table 6-9. The waste pile meets all situations except those listed in the table.

Reference: 27-29,55

Documentation for Source Type, Source waste piles:

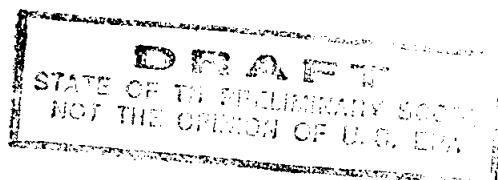
The source type was identified as a waste pile based on site reconnaissance and analytical data from SI sampling activities.

Reference: 27-29,52

Documentation for Particulate Migration Potential:

The particulate migration factor value was assigned using HRS Figure 6-2.

Reference: 55

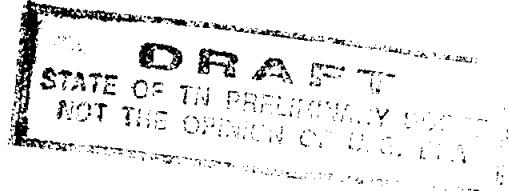


Source: contaminated soil

Particulate Hazardous Substance

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Acenaphthene  
Arsenic  
Benzo(g,h,i)perylene  
Benzo(j,k)fluorene  
Benzo(k)fluoranthene  
Benzofluoranthene, 3,4-  
Bis (2-ethylhexyl) phthalate  
Cadmium  
Chloro-3-methylphenol, 4-  
Chromium  
Chrysene  
Cobalt  
Copper  
Cyanide  
Dibenz(a,h)anthracene  
Dieldrin  
Fluorene  
Heptachlor  
Hexachlorobenzene  
Hexachlorocyclohexane, alpha-  
Hexachlorocyclohexane, beta-  
Hexachlorocyclohexane, delta-  
Indeno(1,2,3-CD)pyrene  
Iron  
Lead  
Lindane  
Manganese  
Mercury  
Naphthalene  
Nickel  
Phenanthrene  
Pyrene  
Sodium  
Trichlorophenol, 2,4,6-  
Zinc

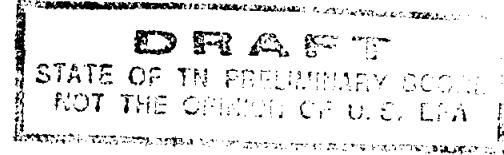


Source: waste piles

Particulate Hazardous Substance

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Acenaphthene  
Acenaphthylene  
Aluminum  
Anthracene  
Arsenic  
Barium  
Benz(a)anthracene  
Benzo(a)pyrene  
Benzo(g,h,i)perylene  
Benzofluoranthene, 3,4-  
Bis (2-ethylhexyl) phthalate  
Cadmium  
Chromium  
Chrysene  
Cobalt  
Copper  
Cyanide  
Di-n-butyl phthalate  
Dibenz(a,h)anthracene  
Diethyl phthalate  
Fluorene  
Hexachlorobenzene  
Hexachlorocyclohexane, alpha-  
Hexachlorocyclohexane, beta-  
Hexachlorocyclohexane, delta-  
Indeno(1,2,3-CD)pyrene  
Iron  
Lead  
Lindane  
Magnesium  
Manganese  
Mercury  
Naphthalene  
Nickel  
Phenanthrene  
Pyrene  
Selenium  
Silver  
Sodium  
Zinc



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 AIR PATHWAY WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

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Source: 1 contaminated soil

Source Hazardous Waste Quantity Value: 0.44

Hazardous Substance	Toxicity Value	Gas Mobility Value	Particulate Mobility Value	Toxicity/Mobility Value
Acenaphthene	10	2.00E-01	8.00E-05	2.00E+00
Arsenic	10000	NA	8.00E-05	8.00E-01
Benzo(g,h,i)perylene	100	NA	8.00E-05	8.00E-03
Benzo(j,k)fluorene	100	2.00E-04	8.00E-05	2.00E-02
Benzo(k)fluoranthene	100	2.00E-04	8.00E-05	2.00E-02
Benzofluoranthene, 3,4-	10000	2.00E-03	8.00E-05	2.00E+01
Bis (2-ethylhexyl) phthalate	100	2.00E-03	8.00E-05	2.00E-01
Cadmium	10000	NA	8.00E-05	8.00E-01
Chloro-3-methylphenol, 4-	1	2.00E-01	8.00E-05	2.00E-01
Chromium	10000	NA	8.00E-05	8.00E-01
Chrysene	100	2.00E-04	8.00E-05	2.00E-02
Cobalt	1	NA	8.00E-05	8.00E-05
Copper	100	NA	8.00E-05	8.00E-03
Cyanide	100	NA	8.00E-05	8.00E-03
Dibenz(a,h)anthracene	10000	NA	8.00E-05	8.00E-01
Dieldrin	10000	2.00E-03	8.00E-05	2.00E+01
Fluorene	100	2.00E-01	8.00E-05	2.00E+01
Heptachlor	1000	2.00E-02	8.00E-05	2.00E+01
Hexachlorobenzene	1000	2.00E-02	8.00E-05	2.00E+01
Hexachlorocyclohexane, alpha-	10000	2.00E-02	8.00E-05	2.00E+02
Hexachlorocyclohexane, beta-	100	2.00E-03	8.00E-05	2.00E-01
Hexachlorocyclohexane, delta-	1	2.00E-02	8.00E-05	2.00E-02
Indeno(1,2,3-CD)pyrene	100	NA	8.00E-05	8.00E-03
Iron	100	NA	8.00E-05	8.00E-03
Lead	10000	NA	8.00E-05	8.00E-01
Lindane	10000	2.00E-02	8.00E-05	2.00E+02
Manganese	10000	NA	8.00E-05	8.00E-01
Mercury	10000	2.00E-01	8.00E-05	2.00E+03
Naphthalene	100	2.00E-01	8.00E-05	2.00E+01
Nickel	10000	NA	8.00E-05	8.00E-01
Phenanthrene	100	2.00E-02	8.00E-05	2.00E+00
Phenol	1	1.00E+00	NA	1.00E+00
Pyrene	100	2.00E-03	8.00E-05	2.00E-01
Sodium	100	NA	8.00E-05	8.00E-03
Toluene	10	1.00E+00	NA	1.00E+01
Trichlorophenol, 2,4,6-	10	2.00E-01	8.00E-05	2.00E+00
Zinc	10	NA	8.00E-05	8.00E-04

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 AIR PATHWAY WASTE CHARACTERISTICS  
 Landes Company - 04/14/94

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Source: 2 waste piles

Source Hazardous Waste Quantity Value: 412.00

Hazardous Substance	Toxicity Value	Gas Mobility Value	Particulate Mobility Value	Toxicity/Mobility Value
Acenaphthene	10	2.00E-01	8.00E-05	2.00E+00
Acenaphthylene	100	2.00E-02	8.00E-05	2.00E+00
Aluminum	100	NA	8.00E-05	8.00E-03
Anthracene	10	2.00E-03	8.00E-05	2.00E-02
Arsenic	10000	NA	8.00E-05	8.00E-01
Barium	10	NA	8.00E-05	8.00E-04
Benz(a)anthracene	1000	2.00E-04	8.00E-05	2.00E-01
Benzo(a)pyrene	10000	2.00E-04	8.00E-05	2.00E+00
Benzo(g,h,i)perylene	100	NA	8.00E-05	8.00E-03
Benzofluoranthene, 3,4-	10000	2.00E-03	8.00E-05	2.00E+01
Bis (2-ethylhexyl) phthalate	100	2.00E-03	8.00E-05	2.00E-01
Cadmium	10000	NA	8.00E-05	8.00E-01
Chromium	10000	NA	8.00E-05	8.00E-01
Chrysene	100	2.00E-04	8.00E-05	2.00E-02
Cobalt	1	NA	8.00E-05	8.00E-05
Copper	100	NA	8.00E-05	8.00E-03
Cyanide	100	NA	8.00E-05	8.00E-03
Di-n-butyl phthalate	10	2.00E-02	8.00E-05	2.00E-01
Dibenz(a,h)anthracene	10000	NA	8.00E-05	8.00E-01
Diethyl phthalate	1	2.00E-01	8.00E-05	2.00E-01
Fluorene	100	2.00E-01	8.00E-05	2.00E+01
Hexachlorobenzene	1000	2.00E-02	8.00E-05	2.00E+01
Hexachlorocyclohexane, alpha-	10000	2.00E-02	8.00E-05	2.00E+02
Hexachlorocyclohexane, beta-	100	2.00E-03	8.00E-05	2.00E-01
Hexachlorocyclohexane, delta-	1	2.00E-02	8.00E-05	2.00E-02
Indeno(1,2,3-CD)pyrene	100	NA	8.00E-05	8.00E-03
Iron	100	NA	8.00E-05	8.00E-03
Lead	10000	NA	8.00E-05	8.00E-01
Lindane	10000	2.00E-02	8.00E-05	2.00E+02
Magnesium	100	NA	8.00E-05	8.00E-03
Manganese	10000	NA	8.00E-05	8.00E-01
Mercury	10000	2.00E-01	8.00E-05	2.00E+03
Naphthalene	100	2.00E-01	8.00E-05	2.00E+01
Nickel	10000	NA	8.00E-05	8.00E-01
Phenanthrene	100	2.00E-02	8.00E-05	2.00E+00
Pyrene	100	2.00E-03	8.00E-05	2.00E-01
Selenium	100	NA	8.00E-05	8.00E-03
Silver	100	NA	8.00E-05	8.00E-03
Sodium	100	NA	8.00E-05	8.00E-03
Zinc	10	NA	8.00E-05	8.00E-04

DO NOT USE THIS STATE OF THE PATHWAY SCORE  
 NOT THE CRITERIA OF U.S. EPA  
 USE STATE OF THE PATHWAY SCORE

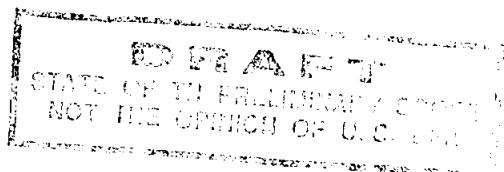
Hazardous Substances Found in an Observed Release

Sample Observed Release ID	Hazardous Substance	Particulate Toxicity/ Mobility Value	Gas Toxicity/ Mobility Value
-----			
- N/A and/or data not specified			

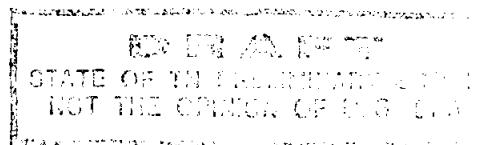
Documentation for Particulate Mobility:

The particulate mobility factor value was assigned from HRS Figure 6-3.

Reference: 55



Toxicity/Mobility Value from Source Hazardous Substances:	2.00E+03
Toxicity/Mobility Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Mobility Factor:	2.00E+03
Sum of Source Hazardous Waste Quantity Values:	4.12E+02
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	18



Actual Contamination

No. Sample ID	Distance (miles)	Level of Contamination
-----		
- N/A and/or data not specified		

Potential Contamination

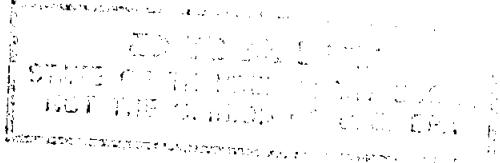
Distance Categories Subject to Potential Contamination	Population	Value
Onsite	5.0	0.4000
> 0 to 1/4 mile	624.0	13.1000
> 1/4 to 1/2 mile	1876.0	8.8000
> 1/2 to 1 mile	7501.0	8.3000
> 1 to 2 miles	30003.0	26.6000
> 2 to 3 miles	50004.0	12.0000
> 3 to 4 miles	70000.0	7.3000

Potential Contaminant Factor: 77.0000

Documentation for Population Onsite Distance Category:

This figure is based on visual observations.

Reference: 29



Documentation for Population > 0 to 1/4 mile Distance Category:

The population within this distance ring is an estimate based on the estimated total population of 160,000 people living within the Landes Company 4-mile site radius. The population is calculated using the formula for the area of a circle; Area = 3.14 X Radius Squared.

Reference: 1,24,26

Documentation for Population > 1/4 to 1/2 mile Distance Category:

The population is calculated similarly as described for the 0 to 1/4 mile distance ring.

Reference: 1,24,26

Documentation for Population > 1/2 to 1 mile Distance Category:

The population is calculated similarly as described for the 0 to 1/4 mile distance ring.

Reference: 1,24,26

Documentation for Population > 1 to 2 miles Distance Category:

The population is calculated similarly as described for the 0 to 1/4 mile distance ring.

Reference: 1,24,26

Documentation for Population > 2 to 3 miles Distance Category:

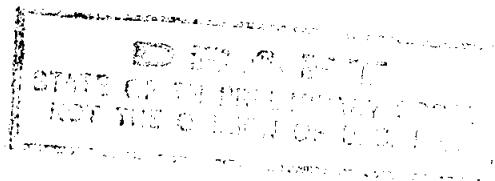
The population is calculated similarly as described for the 0 to 1/4 mile distance ring.

Reference: 1,24,26

Documentation for Population > 3 to 4 miles Distance Category:

The population is calculated similarly as described for the 0 to 1/4 mile distance ring.

Reference: 1,24,26



Nearest Individual Factor

---

Level of Contamination: Potential  
Distance in miles: 0 to 1/8

Nearest Individual Value: 20

Documentation for Nearest Individual:

The largest building on the site, the "assembly building", is regularly occupied by workers taking care of the storage of packaged insulation products, etc. The assembly building is approximately 100 feet from the area of observed soil contamination.

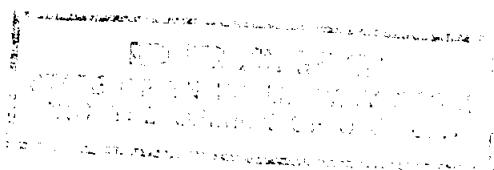
Reference: 52,53

Resources

---

Resource Use: NO

Resource Value: 0



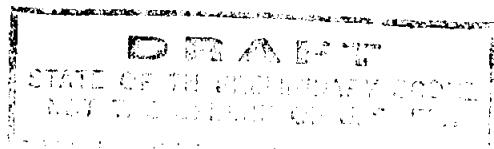
Documentation for Resources:

No resources identified.

Reference: 29,47

Actual Contamination, Sensitive Environments

Sensitive Environment	Distance (miles)	Sensitive Environment Value
- N/A and/or data not specified		



Actual Contamination, Wetlands

Distance Category	Wetland Acreage	Wetland Acreage Value
- N/A and/or data not specified		

=====

Sensitive Environments Actual Contamination Factor: 0.000  
(Sum of Sensitive Environments + Wetlands Values)

Potential Contamination, Sensitive Environments

Sensitive Environment	Distance (miles)	Sensitive Environment Value	Distance Weight	Weighted Value/10
- N/A and/or data not specified				

Potential Contamination, Wetlands

Distance Category	Wetland Acreage	Wetland Acreage Value	Distance Weight	Weighted Value/10
- N/A and/or data not specified				

=====  
Sensitive Environment Potential Contamination Factor: 0.000

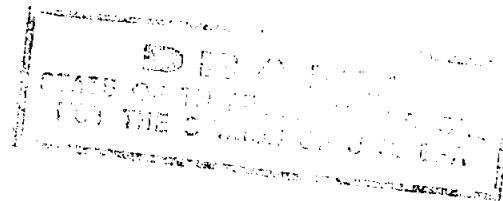
Documentation for Sensitive Environment wetland:

A small wetland borders the southeastern corner of the site.

Reference: 29

PREscore 2.0 - PRESCORE.TCL File 05/11/93  
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Landes Company - 04/14/94

PAGE: 139



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## REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IV

Site Name: LAWES CONCRETE EPAID#: TNDCC3328960  
 Alias Site Names: CONCRETE FORMS

City: CHATTANOOGA County or Parish: HAMILTON State: T. C.  
 Refer to Report Dated: 4/26/93 Report type: PA  
 Report developed by: TDEC, DEP, TCEQ

## DECISION:

- | | 1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:
- |   |  |             |
|---|--|-------------|
| 1a. Site does not qualify for further remedial site assessment under CERCLA<br>(Site Evaluation Accomplished - SEA) | 1b. Site may qualify for further action, but is deferred to: | RCRA<br>NRC |
|---|--|-------------|
- ✓ 2. Further Assessment Needed Under CERCLA:      2a. (optional) Priority: | | Higher  Lower
- 2b. Activity Type:      | | PA      | | ESI  
 SI      | | HRS evaluation  
 | | Other: \_\_\_\_\_

DISCUSSION/RATIONALE: Site has on-site worker and Human health (Nearby School) concerns that may not be addressed by HRS. These warrant sampling. SW pathway concern  
no warrant sampling.

Report Reviewed and Approved by: Lofton Carr Signature: Lofton Carr Date: 6/30/95  
 Site Decision Made by: Lofton Carr Signature: Lofton Carr Date: 6/30/95



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

DIVISION OF SUPERFUND  
401 Church Street  
4th Floor, L & C Annex  
Nashville, Tennessee 37243-1538

May 11, 1993

Mr. Robert Morris  
State Project Officer  
Investigations & Compliance  
U.S. EPA Region IV  
345 Courtland Street  
Atlanta, Georgia 30365

REC'D.

MAY 14 1993

WFO:JAD

Dear Mr. Morris:

Enclosed please find the PA for Landes Company (TND003328960, TN# 33-633), Chattanooga, Tennessee. The TDSF recommends a Site Investigation to further evaluate the extent of contamination onsite.

If you have any questions, please call (615) 532-0906.

Sincerely,

*Nancy Thomas*  
Nancy Thomas  
Site Assessment Manager  
Tennessee Division of Superfund

*L. Cane  
6/13/93*

PRELIMINARY ASSESSMENT

NARRATIVE REPORT

LANDES COMPANY

CHATTANOOGA, TENNESSEE

CERCLIS No. TND 003328960

TENNESSEE FILE No. 33-633

Prepared for the  
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DIVISION OF SUPERFUND  
in cooperation with  
WASTE MANAGEMENT DIVISION  
U.S. ENVIRONMENTAL PROTECTION AGENCY

DATE: April 26, 1993

Prepared By  
Craig Stannard

Reviewed By  
Wayne Everett

Approved By  
Nancy Thomas

*Craig Stannard* *Wayne Everett* *Nancy Thomas TDSR/SAM*  
*05/11/93*

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REPORT:                   Preliminary Assessment  
                            Narrative Report

SITE:                   Landes Company

CERCLIS NO.:           TND 003328960

TN-FILE NO.:           33-633

PREPARED BY:           Craig Stannard, Geologist  
                          Tennessee Department of Environment and Conservation  
                          Division of Superfund

DATE:                   4/26/93

## 1.0 INTRODUCTION

The Tennessee Division of Superfund (TDSF), under cooperative agreement with the U.S. Environmental Protection Agency (EPA), conducted a Preliminary Assessment (PA) of the Landes Company Site in Hamilton County, Tennessee. This investigation was performed under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and the Superfund Amendments and Reauthorization Act of 1986 (SARA).

### 1.1 Objectives

The purpose of this investigation was to collect information concerning conditions at the site sufficient to assess the threat to human health and the environment; to identify, if possible, sources which could be attributed to known site contamination; and to determine the need for further investigation under CERCLA/SARA or other authority.

### 1.2 Scope of Work

The objectives were achieved through the completion of specific tasks which included:

- review of available file information;
- a comprehensive target survey;
- and on-site reconnaissance.

## 2.0 SITE CHARACTERIZATION

### 2.1 Location

The Landes Company site is located at 314 Hooker Road in Chattanooga, Tennessee (Ref. 10). The geographic coordinates of the site are latitude 34 degrees 59' 43" north and longitude 85 degrees 18' 30" west (See Site Location Map, Figure 1). To reach the site from Interstate 24, travel south on Rossville Boulevard for approximately 2 miles. Turn right onto Hooker Road and continue west for 1 mile. The Landes Company site is on the left side of Hooker Road immediately after the intersection with Wilson Road (Ref. 47).

Hamilton County, Tennessee receives 56 inches of annual precipitation and the 1-year/24 hour rainfall is 3.1 inches. The wettest months are December-March, and the dryest are May-June, and August-November. Snowfall is possible December-March (Refs. 40,42).

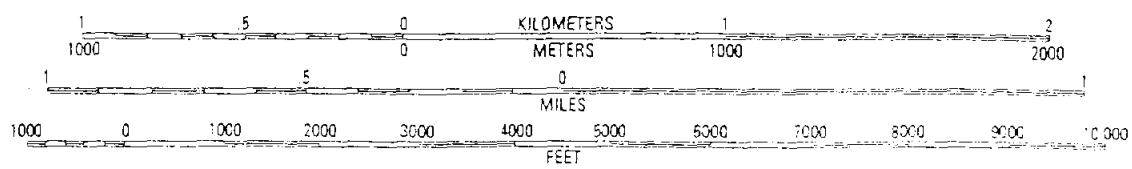
### 2.2 Site Description

The site is located in a low lying area approximately 1/4 mile west of Chattanooga Creek. The area surrounding the site is urban with heavy residential, commercial, and industrial development (Refs. 1,43-48). A 4-mile radius sweep around the site takes in most of Chattanooga (population: 152,466) as well as Rossville (population: 3,601), East Ridge (21,101), and Lookout Mountain (population: 1,901). The nearest school is the Piney Woods Elementary School on Wilson Road approximately 300 feet to the east of the site (Refs. 24,26,28).

The site is rectangular in shape and is approximately 17 acres in size (See Site Sketch, Figure 2) (Refs. 5,6). The site is relatively flat. There are 6 industrial buildings and 2 trailers on the site. The building shown as # 1 on the Site Sketch was once known as the "stainless building". The stainless building is currently empty inside except for a pile of red clay at the east end. The building shown as # 2 on the Site Sketch was once known as the "assembly building". It is currently being used to store foam rubber scraps. The building shown as # 3 on the Site Sketch was the former paint shed. This concrete floored building is currently empty with the exception of two 5-gallon buckets and one 50-gallon drum. The buckets are half full with dry yellow paint and the drum is labelled "lemon disinfectant". Building # 3 has a small storage shed attached to it on the east side (Ref. 27-29). This addition contains 4 drums (emergency overpacks) left there by Ferguson Harbor Service, Inc. (the State's Superfund contractor) during a partial cleanup at the site in 1991 (Refs. 21,22). The building shown as # 4 on the Site Sketch was once known as the pan building. Building # 4 is a quonset hut structure. It is currently locked up and innaccessible. The building shown as # 5 on the Site Sketch was once known as the "saw shed". Building # 5 is currently being used to store lumber and metal scaffolding. There are several (approximately 10) 55-gallon steel drums present at the eastern end of the shed. Some of the drums are filled or partially filled with oil. Most contain only scrap metal

Base Map is a Portion of the Following 7.5' U.S.G.S.  
Quadrangles: Chattanooga, Tennessee, 1976; Fort Oglethorpe,  
Georgia-Tennessee, 1982.

SCALE 1:24 000



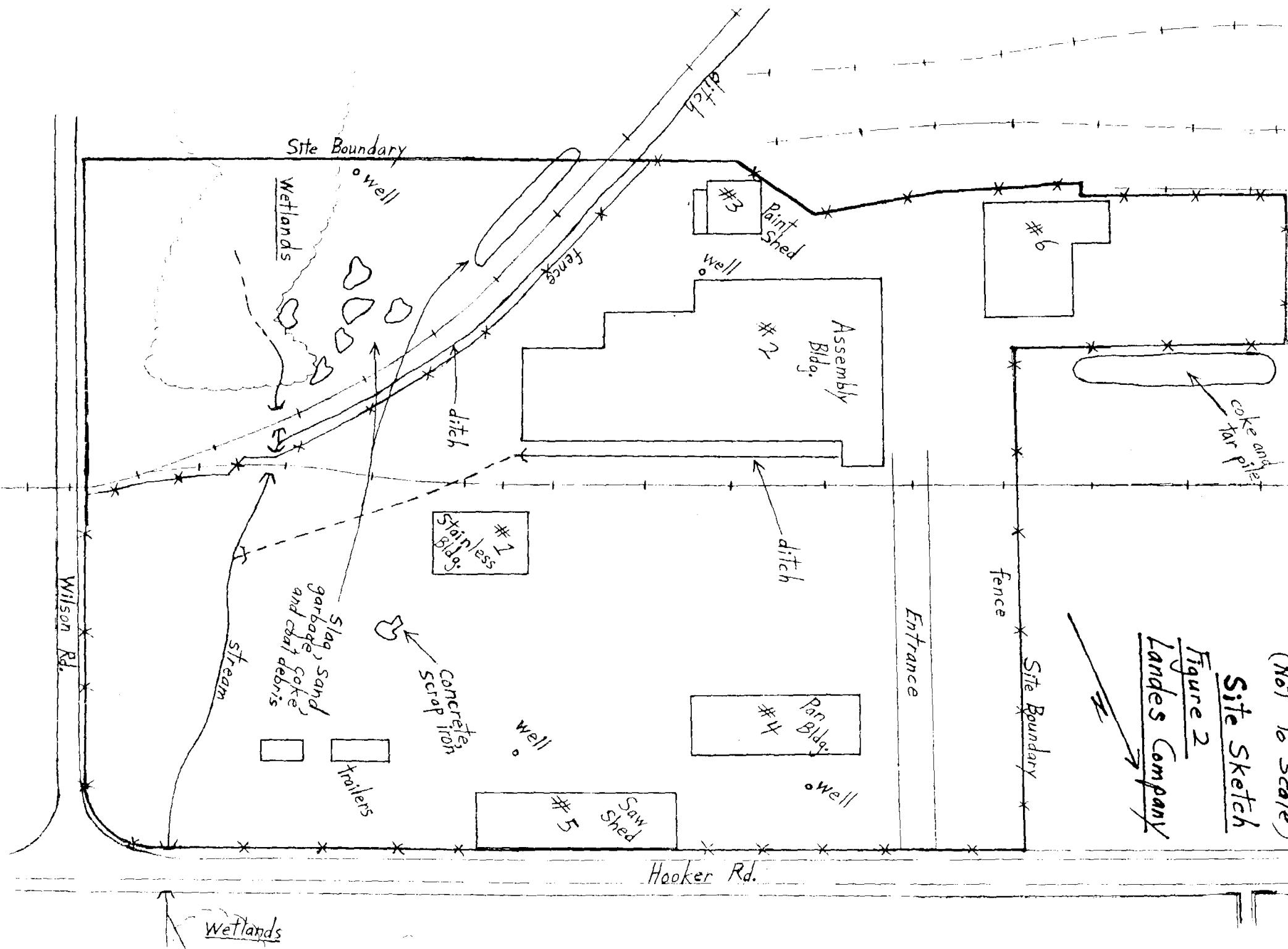
CONTOUR INTERVAL 5 METERS

Figure 1. Site Location Map, Landes Company



(Not to Scale)

Figure 2  
Landes Company



and trash. There are approximately four drums along the western end of the shed which may have industrial chemicals in them. One drum is labelled "concrete form releasant". The building shown as # 6 is a large warehouse-like structure that contains two small piles of sand and clay and a room partially full of fiberglass insulation products and boxes of polyethylene sheeting.

A railroad track runs across the property in an east-west direction along the north side of the assembly building. Another railroad track cuts diagonally across the southeastern corner. Two drainage ditches parallel the railroad tracks and empty into a small stream that crosses the site at its eastern end. These drainage ditches receive runoff from adjacent industrial properties to the west as well as from the site itself. There are storm drains throughout the site which also drain the site and empty into the stream at the east end of the site (Refs. 27-29).

Most of the area surrounding the main buildings is sparsely vegetated with grass and weeds. The driveway into the site is gravel covered and the area immediately to the west of the assembly building (area between buildings #2 and #6 on the Site Sketch) is surfaced in concrete. The eastern end of the site adjacent to the small stream is densely vegetated (Refs. 27-29).

There are at least 4, and possibly 5, monitoring wells on the site. One of the wells, located on the south side of the assembly building, is flush with the driveway and has "S-5" inscribed on the cap. The three other wells observed during the PA reconnaissance protrude approximately 2 and 1/2 feet above the surface of the site (Refs. 27-29).

The site is bordered on the south by the Chattanooga Coke Superfund site and adjacent wetlands. It is bordered on the east by Wilson Road, an automobile scrap yard, the Piney Woods Elementary School, and surrounding residential properties. It is bordered on the north by Hooker Road, an automobile scrap yard, and wooded wetland habitat areas adjacent to Chattanooga Creek. It is bordered on the west by the Morningside Chemicals Superfund site and Secondary Aluminum Smelters, Inc., an active metal recycling facility (Refs. 5,27-29,44,47).

Most of the site (that portion containing the buildings and trailers) is surrounded by a tall, chain-link, barbed-wire fence. The fence has several large holes in it along the southern side of the site which could permit human access. There are two gated entrances along Hooker Road which provide access to the site. The gates are open during the daytime and the site is not guarded (Refs. 27-29).

The southeastern portion of the site (approximately 3 acres) is outside of the fenced area and is adjacent to a wetlands area that borders the site to the south. This southeastern corner of the site once served as the Landes Company sand blasting area. It is currently littered with industrial garbage including at least 10 empty 55-gallon steel and cardboard drums, piles of foundry sand and slag, and coal

and coke debris. This area is easily accessible by local residents (Refs. 27-29).

### 2.3 Operational History and Waste Characteristics

Industrial activity at the Landes Company site can be traced back to 1947. Most of the businesses that have operated at the site during this period have specialized in metal fabrication and in the rental and manufacturing of concrete forms and scaffolding (Refs. 10,23,37). In June, 1981, the Tennessee Division of Water Pollution Control inspected the facility and found it to be discharging raw sewage, shop oils, and sludges into surface drainage ditches and storm drains emptying into Chattanooga Creek. Concrete Forms Corporation was the business operating at the Landes Company site at that time and it was issued a Notice of Violation. In 1983, it connected to the city's municipal sewer system (Refs. 12,13,35,36).

In May, 1990, the Tennessee Division of Solid Waste Management received an anonymous complaint concerning the improper disposal at the Landes Company site of paints, paint thinners, concrete cleaners, and other assorted wastes used in the manufacturing process. The complainant alledged that these substances were periodically poured out onto the ground at the site (Ref. 9). The Tennessee Division of Solid Waste Management investigated the complaint and discovered an illegal on-site dump at the southeastern corner of the site in which several kinds of hazardous industrial wastes and chemicals were identified. The list included small containers of oil, several gallons of paint, several gallons of roofing cement, a 15-20 gallon container of concentrated ammonium hydroxide (pH 13.6), and a 5 gallon container of a substance listed as industrial pan handler. The illegal dump also contained piles of foundry sand, separator sludge, baghouse dust, and shredder fluff. Samples of the foundry sand were identified as hazardous for lead. Lead is a highly toxic substance that attacks the central nervous system. The Tennessee Division of Solid Waste Management cited the facility with several Notices of Violation, from June, 1990 until January, 1991, for the improper storage and disposal of hazardous waste on site (Ref. 10,11,18,33-35). In June, 1991, the Tennessee Division of Superfund was called in to oversee an emergency overpack of the hazardous waste containers. Superfund's contractor, Ferguson Harbor Service, Inc., overpacked the various containers and moved them to the former paint shed (Refs. 21,22,33-35).

Concrete form manufacturing and metal fabrication activities ended at the site in 1991. In April, 1992, the Tennessee Division of Solid Waste Management forced Hydro-Vac Services, Inc. (a Chattanooga Company) to remove the latex sludge it had been storing at the site. The latex sludge was being stored in the pan building and there was evidence at the time that some of the sludge had leaked from the building into a stormwater drainage system leading to Chattanooga Creek. Today, the Landes Company site is used for the warehousing of foam rubber scraps by Woodbridge Foam Fabricating, Inc. and it is used as the location for a small concrete forms and scaffolding rental

business that is run out of the two trailers at the northeast corner of the site (Formco of Tennessee). The current owner of the site is Robert Brown. His address is unknown (Refs. 27-29,38).

## 2.4 Waste Characteristics

The southeastern corner of the site currently contains the largest quantity of waste on the site. This area contains a large pile of coal and coke debris and furnace slag that is approximately 12 feet high by 30 feet wide by 150 feet long. In addition, there is a smaller pile of furnace slag, foundry sand, and scrap metal that is approximately 20 feet by 20 feet by 2 feet deep. This area also contains several gallons (less than 10) of unidentified liquid waste in small plastic containers (Refs. 27-29).

The rest of the waste on the site consists of contaminated soil, estimated at 100 by 100 feet by 2 feet deep, the 4 overpack drums in the paint shed, the 50-gallon drum in the paint shed, and the 55-gallon drums of unidentified liquid substances in the saw shed (Refs. 27-29).

## 2.5 Potential Offsite Sources

The Chattanooga Coke site adjacent to the Landes Company site could have been the source of the coal and coke debris identified at the southeast corner of the site. The source of much of the other solid debris in this area is not known. The liquids in the drums and the assorted containers on the site are assumed to have been generated at the site itself. During the PA site reconnaissance, TDSF personnel noted that a plastic looseleaf notebook cover in the industrial garbage pile, at the southeast corner of the site, read "Concrete Forms Corporation" Ref. 29).

## 2.6 RCRA Status

The Landes Company site currently has no RCRA status. When the site was actively engaged in the manufacturing of concrete forms, etc. it was classified by the Tennessee Division of Solid Waste Management as a small quantity generator (Ref. 8,32). The Landes Company site has never had the status as a treatment, storage, or disposal facility.

# 3. GROUNDWATER PATHWAY

## 3.1 Hydrogeologic Setting

The soil at the site is classified as the Colbert-Urban land complex. It is described as a highly disturbed soil characteristic of industrial areas and, as such, its composition is unpredictable. PA site reconnaissance revealed the soil or overburden at the site to be an orange to red, cherty-clay residuum. The clay residuum is

approximately 25 feet thick and is very slowly permeable. When groundwater occurs in this clay residuum, it is usually confined to the residuum/bedrock interface where the hydrologic conductivity is greatest (Refs. 20,29,39,42).

The bedrock underlying the site is the Chickamauga Limestone. The Chickamauga is a light-gray, fine-to-coarse grained, thin-to-thick bedded limestone unit that is 1000 to 1500 feet thick. The Chickamauga Limestone is a karst unit and is the aquifer of concern. The Chickamauga Limestone has no significant confining layers. Groundwater occurs along joints, fractures, and bedding planes that have been enlarged through chemical weathering. Well yields are highly variable (Refs. 2,4). Information from monitoring wells upgradient of the site indicates that groundwater in the area is contaminated with industrial waste (Refs. 20,39).

### 3.2 Groundwater Targets

There are monitoring wells on the Landes Company site, the Chattanooga Coke site, and the Morningside Chemicals site (Refs. 20,29,39). Probably the closest active industrial wells to the site are the two Southern Cellulose Products wells (both 150 feet deep) on 38th Street and the Chattanooga Glass Company well (325 feet deep) on West 45th Street (Ref. 16). There are no known private drinking water wells within the 4-mile site radius. Drinking water is supplied to residents in this area entirely by the Tennessee American Water Company from intakes in the Tennessee River upgradient from the site. Groundwater is not known to be used for irrigation or livestock watering in this urban area (Ref. 19).

### 3.3 Groundwater Conclusions

If groundwater at the site is contaminated, it should pose little or no health threat to workers or residents in the area due to the complete absence of drinking water wells within the area of concern. The only wells potentially affected by the site are monitoring wells or industrial wells.

## 4. SURFACE WATER PATHWAY

### 4.1 Hydrologic Setting

The site is within both the 100 year and 500 year floodzones of Chattanooga Creek (Ref. 3). Overland drainage from the site flows through storm drains and surface ditches into a small receiving stream at the eastern end of the site. The small receiving stream flows northward for approximately 1/4 mile and empties into Chattanooga Creek (Refs. 12,27-29,38). Chattanooga Creek flows northward for approximately 5 miles and enters the Tennessee River (Nickajack Lake) at river mile 460.6. The Tennessee River comprises the lower portion of the 15-mile downstream segment (Refs. 43,44,47,48).

#### 4.2 Surface Water Targets

There are no surface water intakes located within the 15-mile downstream segment. The Tennessee American Water Company supplies drinking water to the entire Chattanooga, Rossville, and East Ridge areas (all residents within a 4-mile radius of the site). An estimated 177,855 people are served by this system (Ref. 30). The five raw water intakes for this system are located on the Tennessee River at river mile 465.4, approximately 4.8 miles upstream from the confluence of Chattanooga Creek and the Tennessee River (Ref. 15).

The average flow of the Tennessee River is 36,650 cubic feet per second (cfs). The average flow of Chattanooga Creek is 125 cfs. The Tennessee River is used as an industrial and drinking water supply. It is used for fishing (both commercial and private), recreation, and irrigation, and it is a water source for livestock and wildlife. Chattanooga Creek has been heavily polluted by local industrial activity. Chattanooga Creek is a fishery. It is classified as a water supply for industry, irrigation, livestock, and wildlife (Refs. 17,24-26,31,37).

Known U.S. endangered species in Hamilton County, Tennessee are the bald eagle, peregrine falcon, dromedary pearly mussel, pink mucket, orangefoot pimpleback, Cumberland monkeyface, and the large-flowered skullcap (Ref. 14). Wetland habitats border the southern perimeter of the site and Chattanooga Creek to the north. There are no other known environmentally sensitive or critical habitats within the 15-mile downstream segment (Refs. 27-29,41).

#### 4.3 Surface Water Conclusions

There are no drinking water inlets within the 15-mile downstream segment. There are definable wetland habitats close to the site. The main health threat via the surface water exposure migration pathway appears to be through the human food chain. Those who eat aquatic organisms from Chattanooga Creek and the Tennessee River are at risk. The second greatest threat via the surface water exposure migration pathway is to the wetland habitats near the site.

### 5. SOIL EXPOSURE AND AIR PATHWAYS

#### 5.1 Physical Conditions

The site has several areas of potentially contaminated surface soil (Ref. 9). The Piney Woods Elementary School is greater than 200 feet from the site. The soil exposure pathway appears to pose the greatest health threat to on-site workers. There are possibly four or more workers at the site engaged in the active businesses there (foam rubber scrap storage and the concrete form rentals). One or more of these workers may actually reside at the site. The public is also endangered as the site is accessible and unguarded (Refs. 27-29).

There are no recorded air releases from the site and this exposure pathway appears to pose only a minimal threat, mainly to on-site workers and to nearby residents. There are reportedly 152,466 people living in Chattanooga (Ref. 24).

## 6. SUMMARY AND CONCLUSIONS

Hazardous waste and substances are present on the site. The greatest health risk appears to be by way of the surface water human food chain exposure pathway. The second greatest risk is to the wetland habitats south of the site and along Chattanooga Creek. Other significant risks from on-site contamination are through the soil exposure and air routes. There appears to be almost no health risk by way of the groundwater and drinking water exposure pathways.

Further onsite and offsite investigation, including environmental sampling, is required in order to more fully characterize the wastes and identify the sources. TDSF recommends that a Site Investigation (SI) be conducted at the site.

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Site No. TND 003328960  
Appendix A

References

Site No. TND 003328960  
Ref. No. 1

# **PLANNING DISTRICT SOUTH CENTER CITY 2**

## **BASIC INFORMATION**

CHATTANOOGA-HAMILTON COUNTY, TENNESSEE



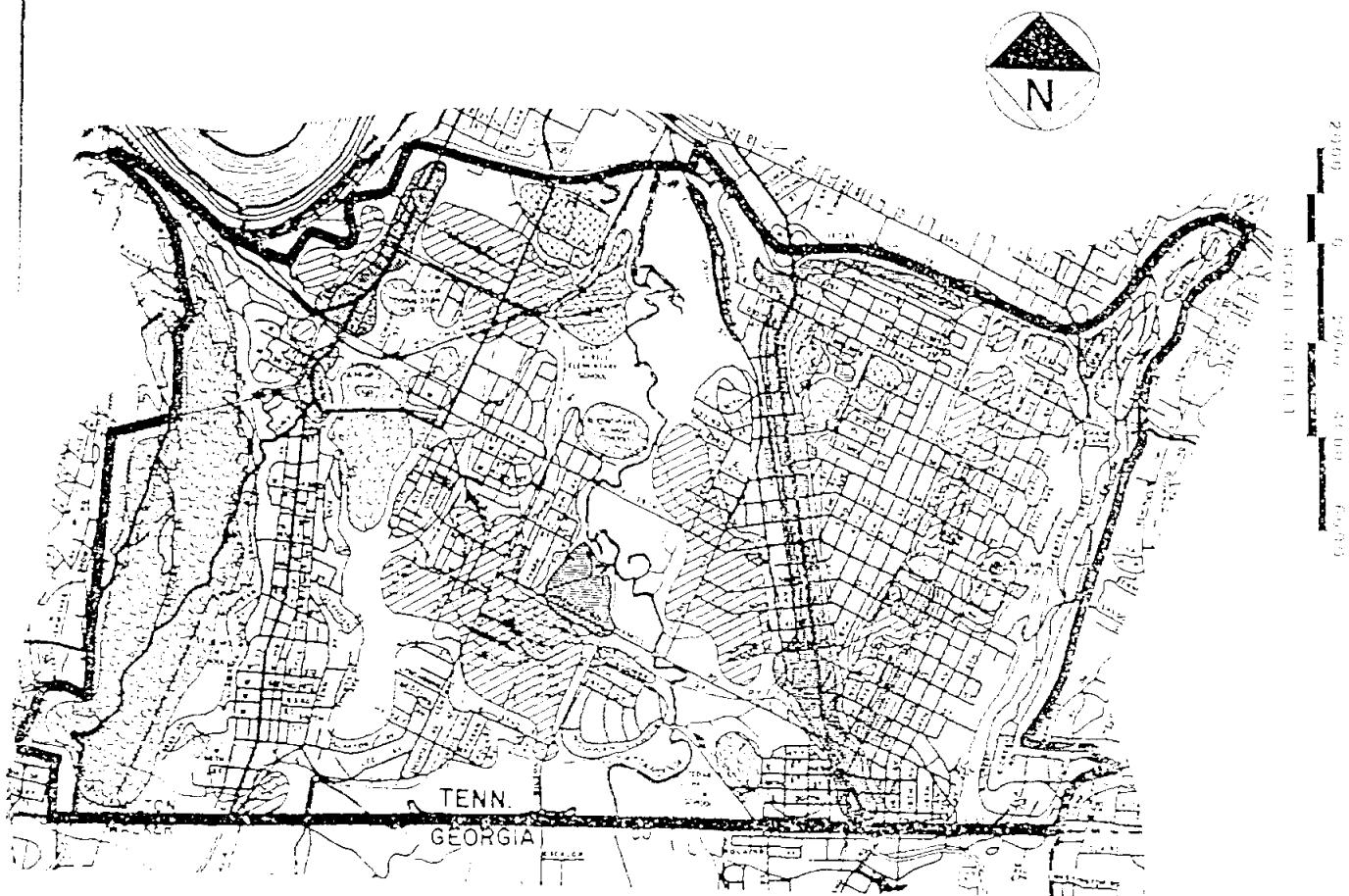
CHATTANOOGA-HAMILTON COUNTY  
REGIONAL PLANNING COMMISSION

LAND USE CHANGES (ACREAGE)

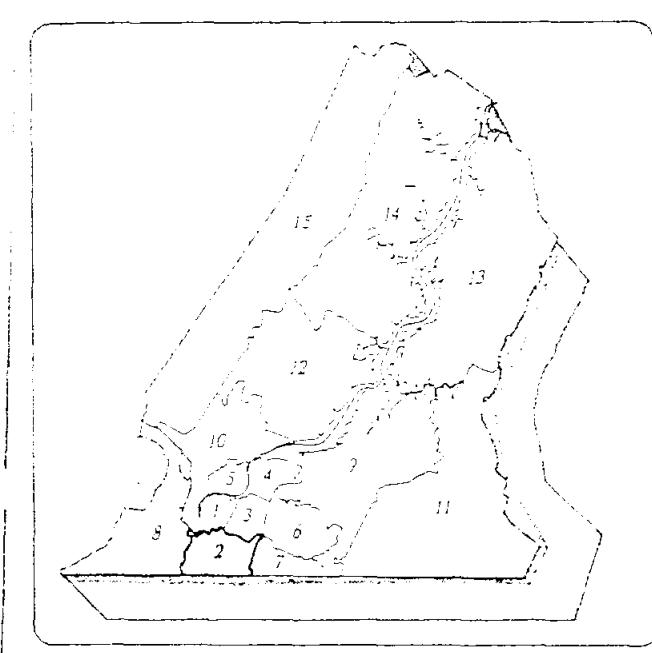
Land Use	Tract 18			Tract 19		
	1985 Acres	1972 %	1985 %	1985 Acres	1972 %	1985 %
Residential	388.4	22.1	22.6	335.2	18.1	18.7
Single-Family	346.7	21.4	20.2	212.4	11.3	11.8
Duplexes	26.3	.4	1.5	68.4	3.2	3.8
Multi-Family	12.7	.2	.7	52.9	3.0	2.9
Residential Parking	.0	-	-	.0	-	-
Trailers	.4	-	-	.8	-	-
Vacant	2.3	.1	.1	.7	.1	-
Industrial	42.9	2.2	2.5	275.9	12.1	15.4
Commercial	26.5	.9	1.5	174.3	3.7	9.7
Institutional	104.9	10.2	6.1	45.4	2.2	2.5
Recreation	345.5	.5	20.1	12.8	.7	.7
Transportation Communication and Utilities	15.4	1.0	.9	233.6	12.8	13.0
Agriculture	.0	-	-	2.9	-	.2
Streets	223.0	14.5	13.0	201.5	11.4	11.2
Vacant	573.6	48.7	33.3	479.0	37.0	26.7
Water	.0	-	-	35.0	1.8	1.9
TOTAL	1,720.2	100.0	100.0	1,795.6	100.0	100.0

# PLANNING DISTRICT 2

## EXISTING LAND USE



## SOUTH CENTER CITY



### Legend :

- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- PUBLIC/SEMI-PUBLIC
- TRANSPORTATION
- VACANT

Site No. TND 003328960  
Ref. No. 2

State of Tennessee

DEPARTMENT OF CONSERVATION  
DIVISION OF GEOLOGY

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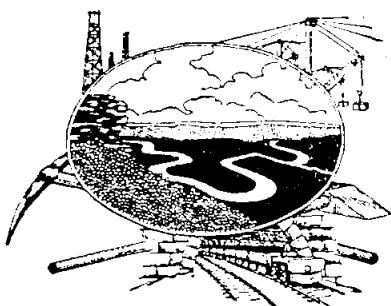
BULLETIN 58

PART I

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GROUND-WATER RESOURCES OF  
EAST TENNESSEE

By  
**G. D. DeBUCHANANNE**  
and  
**R. M. RICHARDSON**



Prepared in cooperation with the U. S. Geological Survey

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NASHVILLE, TENNESSEE

1956

grained conglomerate. Locally, white sandstone occurs as layers interbedded with maroon sandstone and siltstone. In some areas, beds of yellow limy shale and siltstone occur near the base. The Bays formation weathers to a shallow maroon soil that is limy and fertile where the rocks are calcareous, and to a thin sandy soil over sandstone.

The Bays formation is not considered a good aquifer. Ground water occurs only in fractures in the rocks. The sandstone is not thick or permeable enough to yield much water. The silty nature of this formation tends to limit enlargement of fractures by solution so that only small quantities of water are available. The quality of the water is generally good. However, the hardness is usually more than 100 ppm.

#### UPPER ORDOVICIAN SERIES

##### *Upper part of the Chickamauga limestone*

The upper part of the Chickamauga limestone consists of 700 to 1,600 feet of dark-blue to gray well-bedded or platy to nodular limestone with interbedded shaly partings. A few thin beds of volcanic ash are found near the base of the formation, which is silty or sandy. There are many fossil horizons in this formation.

Ground water occurs in these rocks in fractures. Many small-yield springs are found, but they are of no importance for industrial or municipal water supplies. Some of the purer limestone members give rise to springs yielding more than 100 gpm. Wells drilled into these rocks usually yield domestic supplies, but rarely more than 10 gpm. The water is generally hard.

##### *Unit 4 of Chickamauga limestone*

Unit 4 of the Chickamauga limestone consists of 350 to 600 feet of dark-blue to gray bedded or platy to nodular limestone, commonly interbedded with thin shale partings. Volcanic-ash beds are present near the base of this unit, which is usually silty or sandy. Unit 4 weathers to form a rich clay soil, through which the rock crops out locally.

Ground water occurs in this unit in the same way that it does in the upper part of the Chickamauga limestone. Although most springs in this unit are small, there are some large ones. The yield of wells drilled in this unit is dependent upon the number and size of the fractures encountered; the average yield is less than 30 gpm. The chemical quality of water is good except for the hardness which usually exceeds 150 ppm.

##### *Reedsville shale*

The Reedsville shale consists of 250 to 400 feet of greenish, yellow-weathering calcareous shale with beds of dark limestone and layers of silty shale and calcareous siltstone. This formation, which has been

mapped only where it is equivalent in age.

The Reedsville is the springs that usually have flows of supplies have been developed. However developed near stream.

##### *Martinsburg shale*

The Martinsburg is bluish, yellow-weathering grained limestone or Layers of silty shale in the middle of the near the base of the a layer or two of c produce a thin and sil.

Ground water occurs in shale as in the Reedsville developed from the

##### *Squatchie and Jumbo*

The Squatchie is of red and maroon and the boundary is careous in the south is used, the formation laccons limestone, careous maroon shale formations usually a

Ground water has not been enlarged to supply domestic use only small quantities of water from this for

Lo

##### *Silurian sandstones*

In parts of East Tennessee done to differentiate mapped as Silurian

were folded and faulted. The original porosity of the sandstone and other clastic rocks has been destroyed by the deposition of silica and calcium carbonate. In the sandstone and shale that underlie the Cumberland Plateau the fractures are generally small and discontinuous; hence, the yield of wells drilled in these rocks is generally quite small, seldom exceeding a few gallons per minute.

Fractures in the limestone and dolomite which underlie large areas of the Valley and Ridge portion of the county have generally been enlarged by the solvent effect of percolating ground water. The yield of wells drilled in such rocks may be quite high. However, as the distribution of fractures in limestone and dolomite is quite erratic, it is impossible to determine, before drilling, what the yield of a well will be.

Analysis of records of wells drilled in the Chattanooga area and elsewhere in East Tennessee indicates that wells that yield 100 gpm or more are generally located near permanent surface streams. Although wells away from streams occasionally yield large quantities of water, such instances are by no means common.

The yields of wells drilled in shales, such as those of the Conasauga group, are generally low. However, where water-bearing cavities developed in limestone lenses in the shale are encountered, wells may yield up to 100 gpm.

The municipal water supply of Chattanooga is derived from the Tennessee River. Several utility districts on the outskirts of Chattanooga have developed springs. There are numerous springs, some of large size, in the parts of the county underlain by formations of the Knox group.

TABLE 35.—DISCHARGE MEASUREMENTS OF SELECTED SPRINGS IN HAMILTON COUNTY

Spring	Location	Date of measurement	Discharge (gpm)	Temperature (°F.)		Remarks
				Air	Water	
Anderson (no. 180-S)	5 miles southwest of Georgetown	4/15/31	4,640	74	58	Clear
		6/13/31	767	..	..	Do.
		11/ 2/31	458	62	58	Do.
		6/20/50	2,108	90	60	Do.
		7/18/50	1,608	85	59	Do.
		8/ 2/50	4,738	85	59	.....
		9/13/50	7,009	85	59	Clear
		10/17/50	1,894	71	59	.....
		11/15/50	1,883	48	58	.....
		12/20/50	3,736	33	57	.....
		1/19/51	4,792	55	58	.....
		2/15/51	4,974	49	58	.....
		3/13/51	6,183	38	58	.....
		4/17/51	5,756	46	59	.....
		5/16/51	2,345	75	59	.....
		6/20/51	1,936	73	60	.....

Site No. TND 003328960  
Ref. No. 3

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**  
**FLOOD INSURANCE RATE MAP**

Enclosure 9 (4 11/82)

CITY OF  
**CHATTANOOGA,**  
TENNESSEE  
HAMILTON COUNTY

**PANEL 26 OF 30**

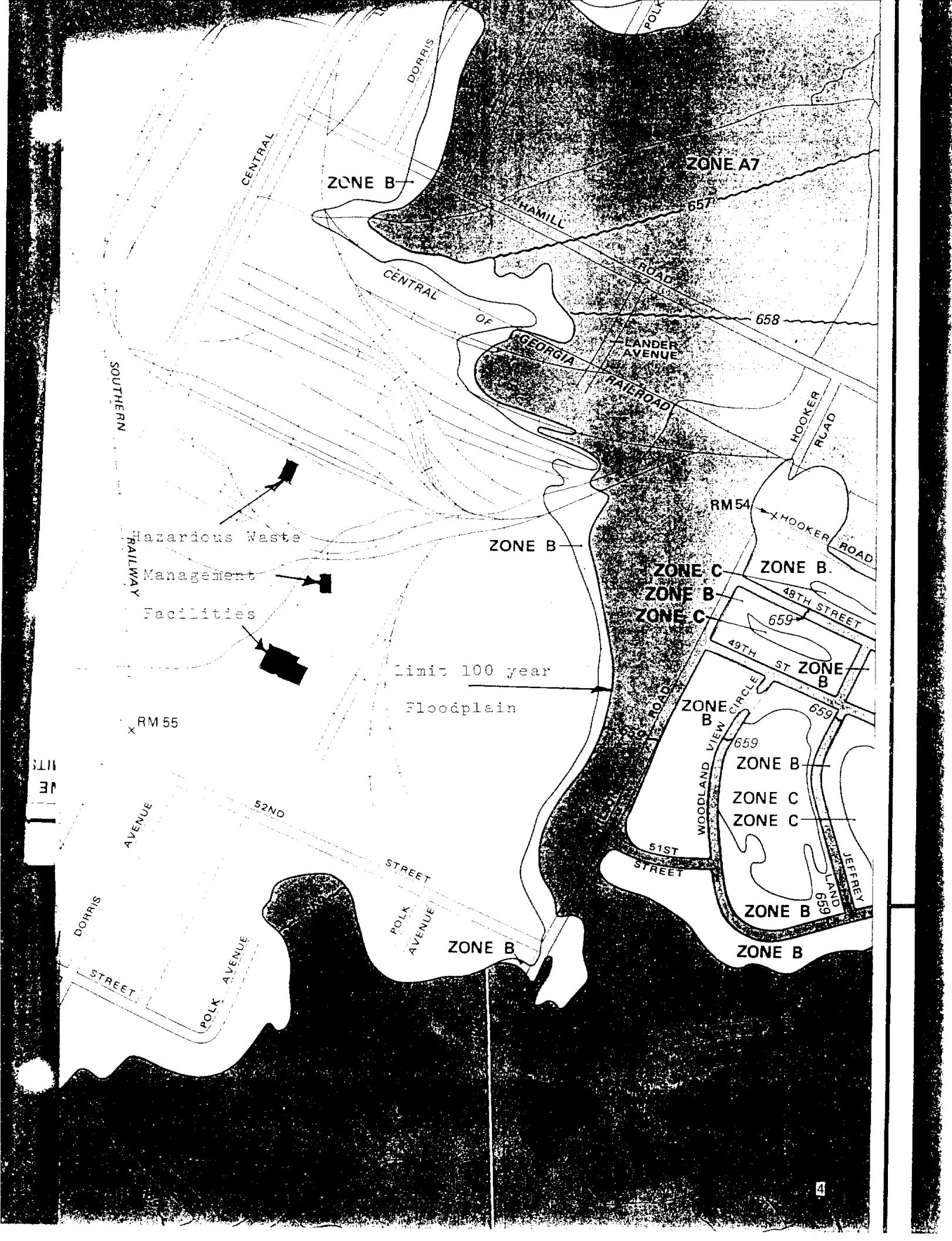
(SEE MAP INDEX FOR PANELS NOT PRINTED)

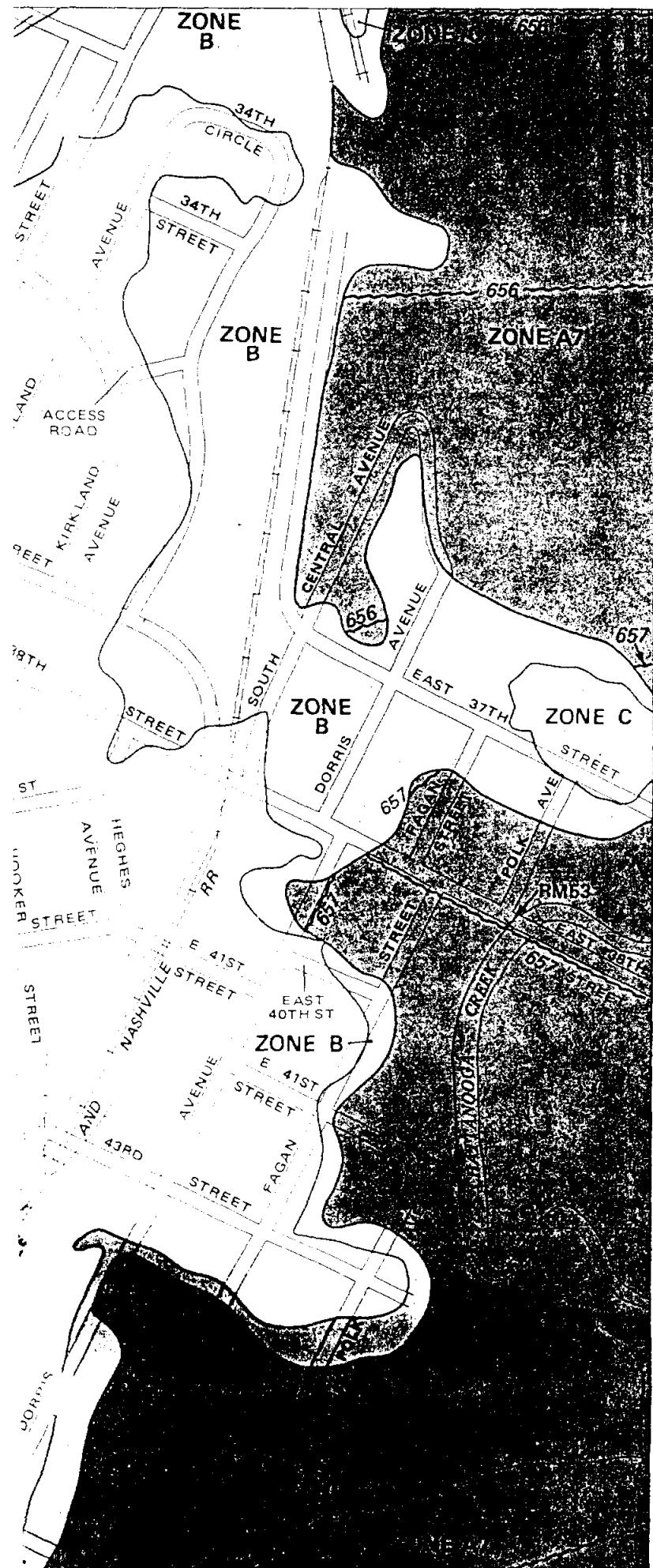
**COMMUNITY-PANEL NUMBER**  
**470072 0026 A**

**EFFECTIVE DATE:**  
**SEPTEMBER 3, 1980**



**U.S. DEPARTMENT OF HOUSING  
AND URBAN DEVELOPMENT  
FEDERAL INSURANCE ADMINISTRATION**





## KEY TO MAP

500-Year Flood Boundary	— — — — —	<b>ZONE B</b>
100-Year Flood Boundary	— — — — —	<b>ZONE B</b>
Zone Designations* With Date of Identification e.g., 12/2/74	— — — — —	
100-Year Flood Boundary	— — — — —	<b>ZONE B</b>
500-Year Flood Boundary	— — — — —	<b>ZONE B</b>
Base Flood Elevation Line With Elevation In Feet**	— — — — —	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)	
Elevation Reference Mark	RM7 X	
River Mile	• M1.5	

\*Referenced to the National Geodetic Vertical Datum of 1929

## \*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot; or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

## NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

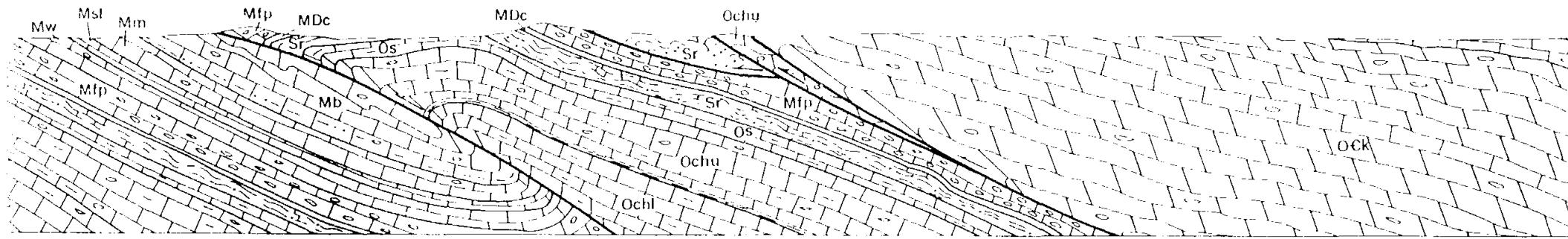
For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:

JUNE 14, 1974

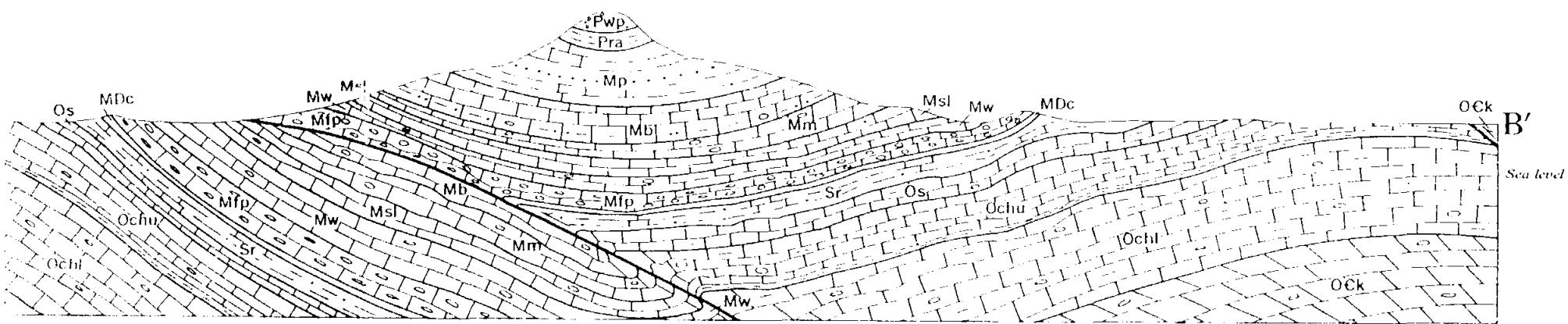
FLOOD HAZARD BOUNDARY MAP REVISIONS:

Site No. TND 003328960  
Ref. No. 4



SECTION ALONG A-A'

No vertical exaggeration



SECTION ALONG B-B'

No vertical exaggeration

# GEOLOGIC MAP OF THE CHATTANOOGA QUADRANGLE, TENNESSEE

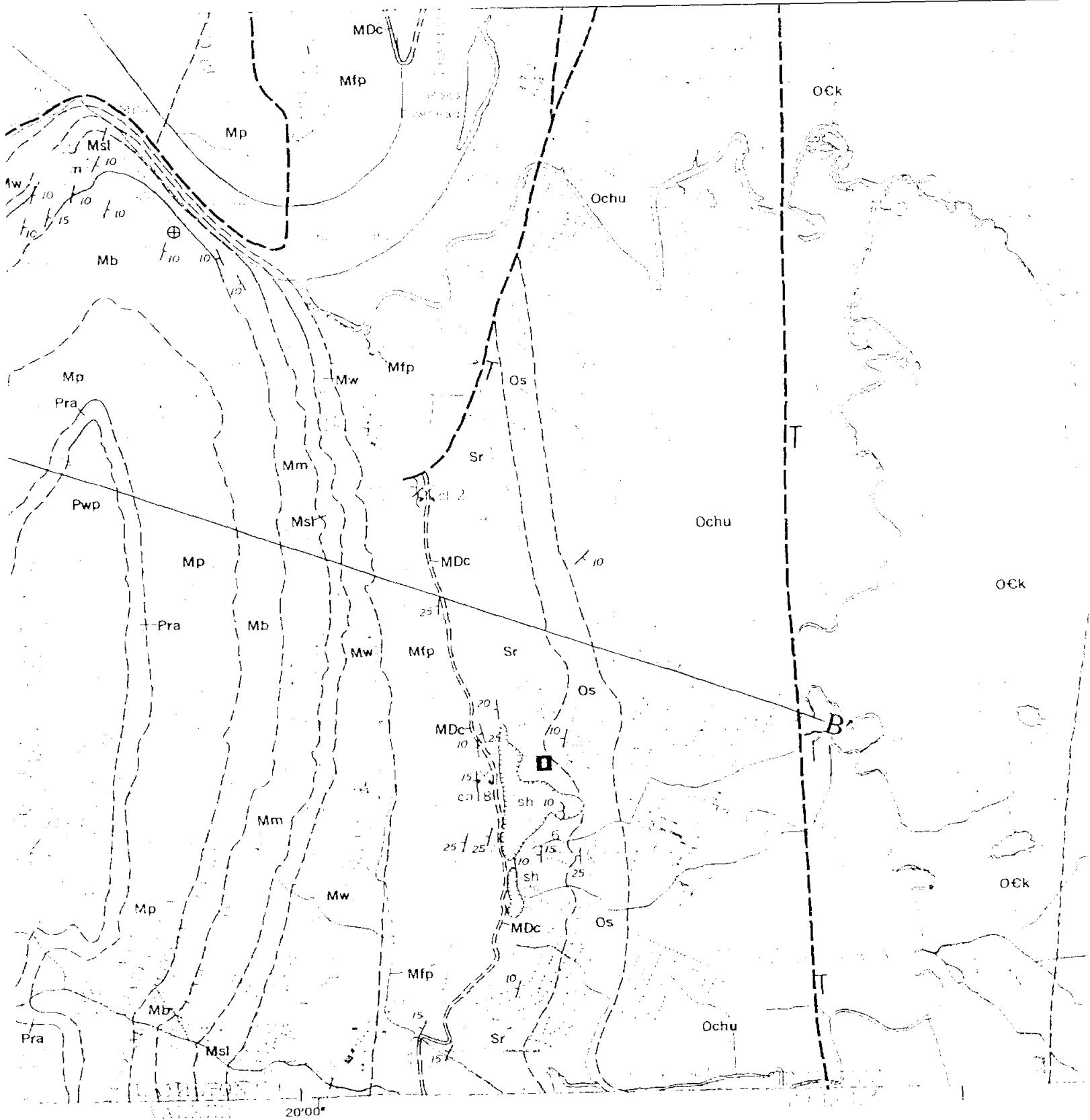
*(Including the Tennessee portion of the Fort Oglethorpe Quadrangle, Georgia-Tennessee)*

By

C. Pratt Finlayson, Robert H. Barnes, John M. Colvin, Jr.,

and Edward T. Luther

1964



1 $\frac{1}{2}$   
TRUE NORTH  
MAGNETIC NORTH

APPROXIMATE MEAN  
DECLINATION 1963

SCALE 1:24 000

1 1/2 0  
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET  
1 MILE

CONTOUR INTERVAL 20 FEET  
DASHED LINES REPRESENT HALF-INTERVAL CONTOURS  
DATUM IS MEAN SEA LEVEL

EC Msl Mm Mfp MDc Ochu

MDc

### Chattanooga Shale

Shale, bituminous, brownish-black (weathers yellowish-orange to brown), fissile. Thickness about 20 feet.

Sr

### Rockwood Formation

Shale, reddish to yellowish-orange, with thin beds of siltstone and sandstone. Thin layers and lenses of hematite in upper part. Thickness about 200 feet.

Os

### Sequatchie Formation

Limestone, typically silty and argillaceous, mottled red and green, thin- to medium-bedded. Thickness about 200 feet.

Ochu  
Ochl

### Chickamauga Limestone

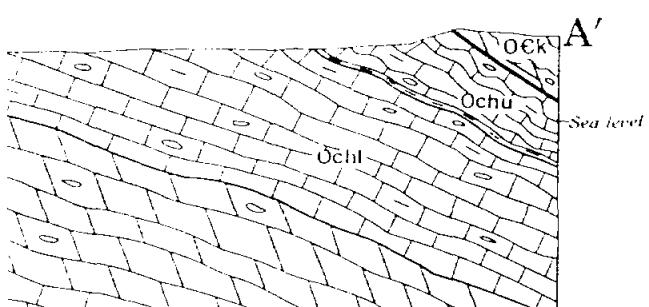
Upper part (Ochu) is limestone, light-gray to gray, fine- to medium-grained, thin- to medium-bedded, with very minor chert. Thickness about 500 feet.

Lower part (Ochl) consists of about 4 feet of bentonite at top, underlain by limestone, light-gray to gray, fine- to coarse-grained, thin- to thick-bedded, and minor dark blocky chert. Thickness about 1,000 feet.

Ock

### Knox Group, Undifferentiated

Dolomite, very siliceous, light- to dark-gray, fine- to coarse-grained, thin- to very thick-bedded, weathers to cherty rubble; minor gray, fine-grained limestone, chiefly in upper part. Thickness about 2,600 feet.



DEVONIAN and  
MISSISSIPPIAN

SILURIAN

ORDOVICIAN

CAMBRIAN and  
ORDOVICIAN

Contact, dashed where approximate

Fault, dashed where approximately located, on upper plate of thrust fault

Thrust fault, arrow indicates relative movement (shown in cross section only)

Klippe

Strike and dip of beds  
Normal

Horizontal

Beds dipping less than 5°

Generalized strike and dip of crumpled or undulated beds

Anticline showing trace and direction of plunge of axial plane

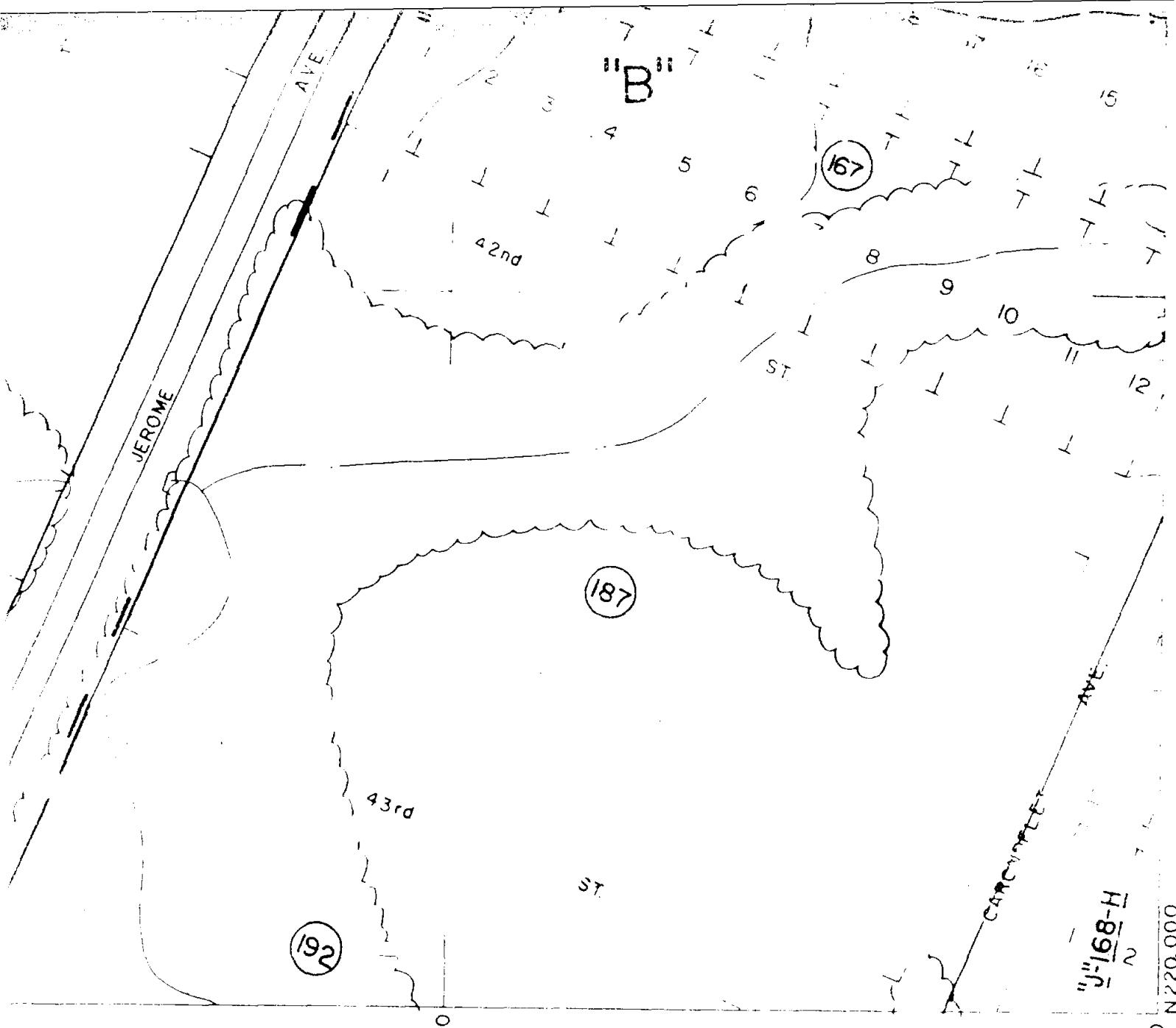
Active pit Aluminum (Bauxite)

Abandoned pit Chert

Abandoned quarry or pit Clay

Abandoned quarry Iron

Site No. TND 003328960  
Ref. No. 5

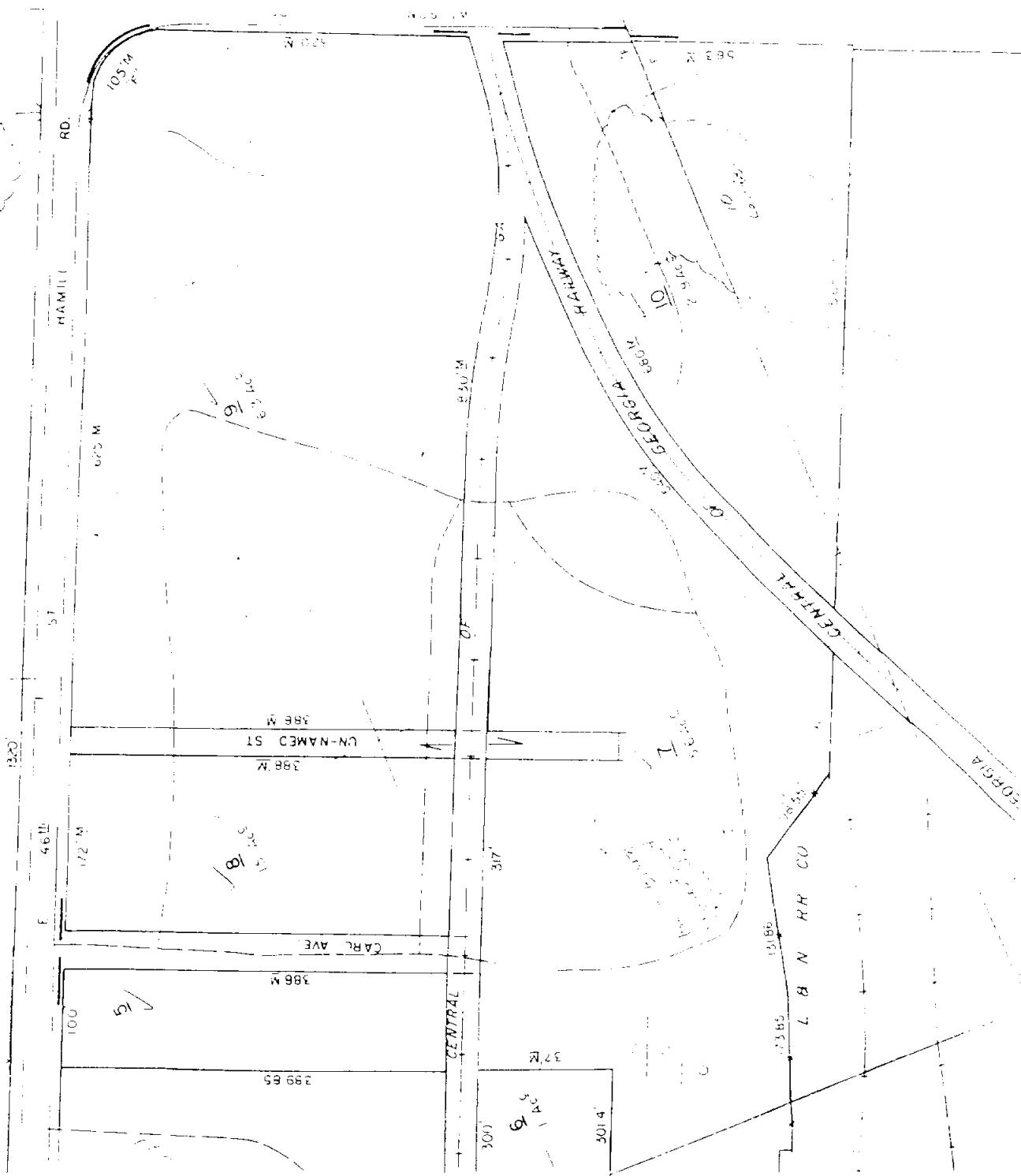


SIGHTS -	
1980	27 FEB / 87
31	26 JAN 1988
JULY 1982	17 / MAY / 88
APR 1983	14
JULY 1984	15

CHATTANOOGA HAMILTON COUNTY		MAP NO
SCALE 1' = 100'	DISTRICT 1	167-E
DATE OF FLYING JAN, 1967		
DATE COMPILED JULY, 1967		

52,210,000 N 220,000

33-633



Site No. TND 003328960  
Ref. No. 6

A.M. entered in Wata Book No 42 Page 178 and recorded in Book 963 Page 18  
Witness my hand at office in CHATTANOOGA, TENN.

Register  
Dept Reg

\* \* \* \* \*  
State of Tennessee

Department of State I, Joe G. Carr, Secretary of State of the State of Tennessee, do hereby certify that the annexed Instrument with Certificate of Acknowledgment was filed in my office and recorded on the 23rd day of December 1947 in Corporation Record Book P-30 page 183.

In Testimony Whereof I have hereunto subscribed my Official Signature

1947

the Governor affixed the Great Seal of the State of Tennessee at the AMEND.10 ART OF

**AMENDMENT TO ARTICLES OF INCORPORATION OF THE**

**AMENDMENT TO ARTICLES OF INCORPORATION OF THE  
ALIGNER CLAMP COMPANY**

Pursuant to a resolution this day adopted by the stockholders of the Aligner Clamp Company, which said Charter was dated June 9, 1947 and recorded in Corporation Record Book Miscellaneous A-3 Page 121 Office of the Secretary of State of the State of Tennessee and also recorded in Volume 1, page---- of the Register's Office of Hamilton County, Tennessee, which resolution is as follows:

"The name of this corporation is hereby changed from the Aligner Clamp Company to the "Concrete Forms Corporation" and said corporation will hereafter be known and operated under the name and title of "Concrete Forms Corporation".

W. R. P. Furse, Jr., and Ashley A. Furse, President and Secretary respectively of the

**Aligner Clamp Company, a corporation, chartered and organized under the laws of the State**

of Tennessee, hereby certify that at a special meeting of the stock holders of said corporation properly called and held at the office of said corporation in the City of Chattanooga, Hamilton County, Tennessee, the above resolution in writing was adopted by an affirmative of the stockholders, representing all of the issued shares of stock, declaring the desire of the stockholders to adopt the foregoing resolution for changing the name of said corporation as hereinabove set forth and that said resolution was duly entered on the minutes of said corporation.

Now, therefore, we, the said R. P. Purse, Jr. President and Ashley A. Purse, Secretary of said corporation, pursuant to the aforesaid resolution hereby certify the fact of the adoption of said resolution by the stockholders of said corporation, to the end that this certificate may be duly recorded in the Office of the Secretary of State and the Charter or articles of incorporation of said corporation be amended accordingly.

R. P. Furco, Jr  
President

Ashley A. Purce  
Secretary

**State of Tennessee.**

County of Hamilton Personally appeared before me Spencer Clinton in and for the state and county aforesaid, R. P. Purse, Jr., and Ashley A. Purse with whom I am personally acquainted and who made oath before me in due form of law that R. P. Purse is President and Ashley A. Purse is Secretary of the Aligner Clamp Company and that the statements

sole in the foregoing certificate are true.

¶ 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

Spencer Clinton, Notary Public  
Hamilton, Ga. Town

My subscription expires Apr 5, 1930

Spencer Clinton  
Notary Public

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Hamilton County - the above instrument and exhibits were filed Dec 30, 1947 at  
18-14 P.M. entered in State File No. 44-2000.

Witness my hand at office in Chattanooga, Tenn.

*T. G. Carr*

Register

Dept Reg

21

State of Tennessee

Department of State I, Jos C. Carr, Secretary of State of the State of Tennessee, do hereby certify that the annexed Instrument with Certificate of Acknowledgment was filed in my office and recorded on the 29th day of December 1947 in Corporation Record Book P-30 page 159.

In Testimony Whereof, I have hereunto subscribed my Official Signature and by order of the Governor affixed the Great Seal of the State of Tennessee at the Department in the

City of Nashville, this 29th day of December A. D. 1947.

The Great Seal of the State of Tennessee  
Agriculture--Commerce--XVI---1796

Jos C. Carr,  
Secretary of State

AMENDMENT TO CHARTER OF INCORPORATION  
CHATTANOOGA GARAGE

At a meeting of the Board of Directors of CHATTANOOGA GARAGE duly held at the office of said corporation in Chattanooga, Tennessee, on the 12th day of December 1947 the following resolution was adopted:

RESOLVED by the Board of Directors of Chattanooga Garage that it is advisable for the company to amend its Charter so as to change the authorized capital stock to be one thousand (1,000) shares of Common Stock of par value of One Hundred Dollars (\$100.00) each; and a meeting of the stockholders of this company is hereby called to be held in the office of the company at 11:00 o'clock A.M. December 17, 1947 for the purpose of considering said amendment to the Charter of Incorporation.

We Tom C. Foust and A. W. Crayne the President and Secretary respectively of CHATTANOOGA GARAGE a corporation chartered and organized under the Laws of the State of Tennessee, in pursuance to directions from the Directors of the corporation, hereby certify that at a meeting of the stockholders of said corporation, legally called and held at the office of this said corporation in the City of Chattanooga pursuant to the above resolution of said Board of Directors, a resolution in writing was adopted by an affirmative vote of the stockholders, said affirmative vote representing a majority of the shares of stock in said corporation, declaring the desire of the stockholders to amend the charter of their said company for the purposes set forth in said resolution of said Board of Directors above set out, and that said resolution of said stockholders was duly entered on the minutes of said corporation.

Now, Therefore, we hereby certify to the fact of the adoption of said resolution by the stockholders of said corporation for the purposes set out, to the end that this certificate may be duly recorded in the office of the Secretary of State and in the office of County Register of Hamilton County, Tennessee.

Witness our hands this the 27th day of December 1947.

Tom C. Foust,  
President

A. W. Crayne,  
Secretary

State of Tennessee

County of Hamilton Before me a Notary Public duly appointed, commissioned and qualified in and for the State and County aforesaid, personally appeared Tom C. Foust and A. W. Crayne with whom I am personally acquainted, and who made oath before me in due form of law that Tom C. Foust is the President and A. W. Crayne is the Secretary of Chattanooga Garage and that the statements made in the foregoing certificate are true.

Witness my hand and official seal at office in Chattanooga, Tennessee this 27th day of December 1947.

This instrument prepared by:  
 William F. Searle, III, Attorney  
 800 Burwell Building  
 Knoxville, Tennessee 37902

WARRANTY DEED

*Liz. J. Sawyer Lita*  
 THIS INDENTURE, made this 30th day of June, 1989,  
 between

CFC FABRICATION CORPORATION, a Tennessee corporation  
 and THE LANDES COMPANY, INC., a Tennessee corporation,

First Parties, and

FMC ACQUISITION CORPORATION, a Tennessee corporation,

Second Party,

WITNESSETH: that said First Parties, for and in consideration of the sum of TEN DOLLARS (\$10.00) cash and other good and valuable considerations to it in hand paid by Second Party, the receipt and sufficiency of which is hereby acknowledged, have granted, bargained, sold and conveyed and do hereby grant bargain, sell and convey unto the said Second Party the following described premises:

All that tract or parcel of land lying and being in the City of Chattanooga, Hamilton County, Tennessee, and being more particularly described as follows:

BEGINNING at the point of intersection of the southern line of Hamill Road (also known as Hooker Road), 50 feet in width, with the western line of Hooker Road (50 feet in width); thence along the western line of Hooker Road South 22 deg. 03 min. West 768.36 feet to a concrete monument with a chiseled "X" at fence corner, and being the southeast corner of property conveyed by Louisville and Nashville Railroad Company to Concrete Forms Corporation, by Deed recorded in Book 1665, page 345, in the Register's Office of Hamilton County, Tennessee; thence with and along the generally southern boundary line of the property conveyed by the last mentioned Deed, North 68 deg. 22 min. West, 738.31 feet, North 30 deg. 04 min. West, 98.55 feet, North 74 deg. 19 min. West, 131.86 feet, North 70 deg. 57 min. West 173.85 feet, North 23 deg. 12 min. East, 15.94 feet, and North 67 deg. 39 min. West, 227.95 feet to the southwest corner of the property conveyed by Deed recorded in Book 1665, page 345, aforesaid; thence along the western line of the property conveyed by said Deed, North 22 deg. 30 min. East, 169.61 feet to the northwest corner thereof; thence along the northern line of the property conveyed by said Deed, South 67 deg. 30 min. East, 300 feet to the southwest corner of property conveyed by K. C. Fitschen and wife Marie M. Fitschen, to Concrete Forms Corporation, by Deed recorded in Book 1705, page 261, re-recorded in Book 1707, page 110, in said Register's Office; thence along the West line of the property conveyed by the last mentioned Deed, North 22 deg. 30 min. East, 559 feet to a point in the southern line of Hamill Road; thence along the southern line of Hamill Road, running South 67 deg. 36 min. East, passing the West line of Carl Drive at 100 feet, the East line of Carl Drive at 140 feet, a total distance of 1,042.68 feet to the point of beginning.

This conveyance is made subject to the following:

Taxes for 1989 which the Grantee assumes and agrees to pay when due.

Deeds of Trust recorded in Book 3549, pages 406-422 and Book 3489, pages 559-577.

Rights of others in any public roads included within the boundaries of the above described property.

BEING the same property conveyed to CPC Fabrication Corporation by Concrete Forms Corporation by Warranty Deed dated February 2, 1985, of record in Book 3443, page 624, in the Register's Office for Hamilton County, Tennessee. The Landes Company, Inc., joins in this Deed for the purpose of conveying any and all rights and interest which it may have in this property as a result of previous agreements with CPC Fabrication Corporation.

THE PREPARER OF THIS DEED MAKES NO REPRESENTATIONS AS TO THE STATUS OF THE TITLE TO THE PROPERTY DESCRIBED HEREIN. THIS DEED HAS BEEN PREPARED SOLELY FROM INFORMATION FURNISHED TO THE PREPARER WHO MAKES NO REPRESENTATION WHATSOEVER OTHER THAN THAT IT HAS BEEN ACCURATELY TRANSCRIBED FROM THE INFORMATION PROVIDED.

TOGETHER with the hereditaments and appurtenances thereto appertaining releasing all claims therein.

TO HAVE AND TO HOLD the said premises to the said Second Party in fee simple forever.

AND said First Party for itself and for its successors in interest does hereby covenant with the said Second Party, its successors and assigns, that it is lawfully seized in fee simple of the premises above conveyed and has full power, authority and right to convey the same and that said premises are free from all encumbrances except as set forth herein, and that it will forever warrant and defend the said premises and the title thereto against the lawful claims of all persons whomsoever.

In this instrument in every case the plural shall include the singular and vice-versa and each gender the others.

IN WITNESS WHEREOF, this instrument has been executed on behalf of First Party by its duly authorized officer on the day and year first above written.

CPC FABRICATION CORPORATION, a  
Tennessee corporation

BY: H. C. Shook  
Duly authorized corporate officer  
Title: PRESIDENT

THE LANDES COMPANY, INC., a  
Tennessee corporation

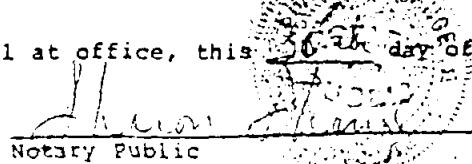
BY: Ronald H. Lande  
Duly authorized corporate officer  
Title: President

STATE OF TENNESSEE  
COUNTY OF HAMILTON

Personally appeared before me, the undersigned authority, a Notary Public in and for said county and in said state, H. C. Shook, with whom I am personally acquainted, and who, upon oath, acknowledged himself to be the President of CPC Fabrication Corporation, the within named bargainer, a corporation, and that he as such officer, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself as Officer.

Witness my hand and official seal at office, this 30th day of June, 1989.

My Comm exp: 11-9-91



Notary Public

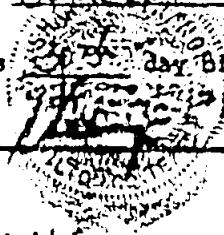
STATE OF TENNESSEE  
COUNTY OF HAMILTON

Personally appeared before me, the undersigned authority, a Notary Public in and for said county and in said state, Russell W. Landes, with whom I am personally acquainted, and who, upon oath, acknowledged himself to be the President of The Landes Company, Inc., the within named bargainer, a corporation, and that he as such Officer, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as Officer.

Witness my hand and official seal at office, this 30th day of June, 1989.

My Com. exp. 11-5-91

Notary Public



Name and address of property owner:

FMC Acquisition Corporation

P.O. Box 158

Knoxville, TN 37901

who is responsible for payment of taxes.

I hereby swear or affirm that the actual consideration or true value of this transfer, whichever is greater, is \$200,000.00.

Subscribed and sworn to before me, this 30th day of June, 1989.

My Com. exp: 11-9-91

Notary Public

TAX M40 #

167F-F-5, 167F-F-7, 167F-F-1

167F-F-9, + 169F-F-10

J 3384

IDENTIFICATION  
REFERENCE

Jun 30 3:53 PM '89

SARAH P. DE FRIESE  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

06/30/89	CONV	200,000.00	E
06/30/89	W/OD	12.00	E
06/30/89	CTAX	660.00	E
06/30/89	PFEE	.50	
			**672.50

LAWYERS TITLE AND ESCROW, INC.

DOME BUILDING

736 Georgia Avenue

Chattanooga, TN 37402

(615) 736-4154

MAIL

Jones, Moore, Palmer & Williams

8th Floor, Blue Cross Bldg.

Cliff, Tenn. 37202

FILE NO. 88-T014

REC'D:

THIS INDENTURE BEGUN

## WARRANTY DEED

Prepared by:

ROBERT L. BROWN, Attorney

100 Dome Building

736 Georgia Avenue

Chattanooga, TN 37402

BOX 3448 PAGE 624

DATE: February 2, 1988

CONCRETE FORMS CORPORATION,

as party or parties of the first part, hereinafter called Grantor, and

CPC FABRICATION CORPORATION,

as party or parties of the second part, hereinafter called Grantee (the words "Grantor" and "Grantee" to include the parties named herein and their respective heirs, successors and assigns):

WITNESSETH that Grantor for and in consideration of the sum of One Dollar and other good and valuable considerations, the receipt whereof is hereby acknowledged, does hereby convey to Grantee in fee simple, the following described property

All that tract or parcel of land lying and being in the City of Chattanooga, Hamilton County, Tennessee and being more particularly described as follows:

BEGINNING at the point of intersection of the Southern line of Hamill Road (also known as Hooker Road), 50 feet in width, with the Western line of Hooker Road (50 feet in width); thence along the western line of Hooker Road South 22 degrees 03 minutes West 768.36 feet to a concrete monument with a chiseled "X" at fence corner, and being the Southeast corner of property conveyed by Louisville and Nashville Railroad Company to Concrete Forms Corporation, by Deed recorded in Book 1665, Page 345, in the Register's Office of Hamilton County, Tennessee; thence with and along the generally Southern boundary line of the property conveyed by the last mentioned Deed, North 68 degrees 22 minutes West 738.31 feet, North 30 degrees 04 minutes West 98.55 feet, North 74 degrees 19 minutes West 131.36 feet, North 70 degrees 57 minutes West 173.83 feet, North 23 degrees 12 minutes East 13.94 feet, and North 67 degrees 39 minutes West 227.95 feet to the Southwest corner of the property conveyed by Deed recorded in Book 1665, Page 345, aforesaid; thence along the Western line of the property conveyed by said Deed, North 22 degrees 30 minutes East 169.61 feet to the Northwest corner thereof; thence along the Northern line of the property conveyed by said Deed, South 67 degrees 30 minutes East 300 feet to the Southwest corner of property conveyed by K. C. Pitschen and wife, Marie M. Pitschen, to Concrete Forms Corporation, by Deed recorded in Book 1705, Page 261, re-recorded in Book 1707, Page 110, in said Register's Office; thence along the West line of the property conveyed by the last mentioned Deed, North 22 degrees 30 minutes East 559 feet to a point in the Southern line of Hamill Road; thence along the Southern line of Hamill Road, running South 67 degrees 36 minutes East, passing the West line of Carl Drive at 100 feet, th East line of Carl Drive at 140 feet, a total distance of 1,042.68 feet to the point of beginning.

Being the same property conveyed by Deed recorded in Book 2896, Page 237 in the Register's Office, Hamilton County, Tennessee.

This conveyance is made subject to the following:

Taxes for 1988 which the Grantee assumes and agrees to pay when due.

Deed of Trust recorded in Book 2876, Page 229 as amended in Book 2997, Page 850 said Register's Office.

Rights of others in any public roads included within the boundaries of the above described property.

Address of Grantee	Mail Tax Notice to	Map Parcel No.
CPC FABRICATION CORPORATION P.O. Box 158 304 Wall Avenue Knoxville, TN 37902	GRANTEE	167P-F-5
		167P-F-7
		167P-F-8
		167P-F-9

TO HAVE AND TO HOLD said property and all rights appurtenant thereto, to Grantee forever in FEE SIMPLE.  
 Grantor warrants that Grantor is lawfully seized and possessed of said property, has full power and lawful authority to convey same, that Grantor's title is marketable, clear, free and unencumbered except as set forth herein, and that Grantor will forever defend the right and title to said property unto Grantee against the claims of all persons whomsoever.

IN WITNESS WHEREOF, Grantor has signed and sealed this Deed the day and year above written.

CONCRETE FORMS CORPORATION

BY: Deborah Dugger

B. 2 4 5:1

IDENTIFICATION  
REFERENCE

Feb 4 3:36 PM '88

SARAH P. DE FRIESE  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

02/04/88	CONV	100.00	
02/04/88	W/DO	6.00	
02/04/88	STAX	290.00	
02/04/88	PERF	.50	442.50

STATE OF \_\_\_\_\_ COUNTY OF \_\_\_\_\_

Before me, the undersigned Notary Public of the state and county aforesaid, personally appeared

the within named bargainer, with whom I am personally acquainted, or proved to me on the basis of satisfactory evidence, and who acknowledged that \_\_\_\_\_ executed the within instrument for the purposes therein contained.

WITNESS my hand at office this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_\_

Date of Expiration of Commission \_\_\_\_\_

Notary Public

(SEAL)

STATE OF TENNESSEE

COUNTY OF HAMILTON

Before me, the undersigned Notary Public of the state and county aforesaid, personally appeared

DAVID C. Hengstman, with whom I am personally acquainted, or proved to me on the basis of satisfactory evidence, and who, upon oath, acknowledged himself to be

the PRESIDENT of the Concrete Forms Corporation, the within named bargainer, a corporation, and that he as such officer, executed the foregoing instrument for the purpose therein contained, by signing the name of the corporation by himself as such officer.

WITNESS my hand, at office, this 2nd day of February, 1988

Date of Expiration of Commission 8-7-91

Notary Public

STATE OF TENNESSEE

COUNTY OF HAMILTON

The undersigned Grantee hereby swears or affirms that the actual consideration for this transfer, or value of the property transferred, whichever is greater, is \$ 100.0000, which amount is equal to or greater than the amount which the property transferred would command at a fair and voluntary sale.

CPC PUBLICATION CORPORATION

BY: M. B. Dugger

Signed and sworn to or affirmed before me on this the 2nd day of February, 1988

Date of Expiration of Commission 8-7-91

Notary Public

Book 2896 page 237

EXHIBIT A

1983  
TO FED. TAX GEN. DIV  
FROM  
PROPERTY  
CONCRETE FORMS CORPORATION

**RECORDER'S MEMO**

Legibility of writing, typing or printing in this document unsatisfactory when received.

IN THE CITY OF CHATTANOOGA, HAMILTON COUNTY, TENNESSEE: Beginning at the point of intersection of the Southern line of Hamill Road (also known as Hooker Road), 50 feet in width, with the Western line of Hooker Road (50 feet in width); thence along the Western line of Hooker Road South 22 degrees 03 minutes West 768.36 feet to a concrete monument with a chiseled "X" at fence corner, and being the Southeast corner of property conveyed by Louisville and Nashville Railroad Company to Concrete Forms Corporation, by Deed Recorded in Book 1665, page 345, in the Register's Office of Hamilton County, Tennessee; thence with and along the generally Southern boundary line of the property conveyed by the last mentioned Deed, North 68 degrees 22 minutes, West 738.31 feet, North 30 degrees 04 minutes West 98.55 feet, North 74 degrees 19 minutes West 131.86 feet, North 70 degrees 57 minutes West 173.85 feet, North 23 degrees 12 minutes East 15.94 feet, and North 67 degrees 39 minutes West 227.95 feet to the Southwest corner of the property conveyed by Deed Recorded in Book 1665, page 345, aforesaid; thence along the Western line of the property conveyed by said Deed, North 22 degrees 30 minutes East 169.61 feet to the Northwest corner thereof; thence along the Northern line of the property conveyed by said Deed, South 67 degrees 30 minutes East 300 feet to the Southwest corner of property conveyed by N. C. Fitchett and wife, Maria M. Fischchen, to Concrete Farms Corporation, by Deed recorded in Book 1705, page 261, re-recorded in Book 1707, page 110, in said Register's Office; thence along the West line of the property conveyed by the last mentioned Deed, North 22 degrees 30 minutes East 559 feet to a point in the Southern line of Hamill Road; thence along the Southern line of Hamill Road, running South 67 degrees 36 minutes East, passing the West line of Carl Drive at 100 feet, the East line of Carl Drive at 140 feet, a total distance of 1,042.68 feet to the point of beginning.  
EXCEPTING the Northeast corner thereof, which has been taken in rounding the curve at the intersection of the West line of Hooker Road with the South line of Hamill Road.  
EXCEPTING the parcels taken at the intersection of the East and West lines of Carl Drive with the South line of Hamill Road, in rounding the curve at said intersections.  
REFERENCE is made for prior title to Deed recorded in Book 1665, page 345, to Deed recorded in Book 1705, page 261, and re-recorded in Book 1707, page 110, to Deed recorded in Book 1093, page 68, to Deed recorded in Book 1124, page 524, and to Deed recorded in Book 1324, page 525, all in the Register's Office of Hamilton County, Tennessee.

There is further excluded the rights-of-way of Central of Georgia Railway, 30 feet in width, located within the boundaries of the track, and shown on Plat of survey by Bell & Trehwit Engineering Associates, Inc., Drawing No. 79-090, dated August 30, 1979.

1/229/0  
5/11/83

Form 688 Rev. December 1982	Department of the Treasury - Internal Revenue Service <b>Notice of Federal Tax Lien Under Internal Revenue Laws</b>	
District	Serial Number	For Optional Use by Recording Office
Nashville	C-83-380	K 3 4 3 9

As provided by sections 6321, 6322, and 6323 of the Internal Revenue Code, notice is given that taxes (including interest and penalties) have been assessed against the following named taxpayer. Demand for payment of this liability has been made, but it remains unpaid. Therefore, there is a lien in favor of the United States on all property and rights to property belonging to this taxpayer for the amount of these taxes, and additional penalties, interest, and costs that may accrue.

Name of taxpayer	Gary L Huggins
Residence	1427 Brenda Rd. Chattanooga, TN 37415
<b>IMPORTANT RELEASE INFORMATION</b> — With respect to each assessment list below, unless notice of lien is filed by the date given in column 4 of this notice sheet, on the day following such date, operate as a certificate of release as defined in IRC 6325 (a).	

MAY 20 8:00 AM '83  
DOROTHY P. BRAMMER  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

Kind of Tax (a)	Tax Period Ended (b)	Identifying Number (c)	Date of Assessment (d)	Last Day for Filing (e)	Unpaid Balance of Assessment (f)
1040	12-31-78	411-74-8619	03-26-79 10-05-81 05-25-81	08-07-85 02-17-88 10-07-87	218.89
1040	12-31-80	"			200.82

Place of filing	Register of Deeds Hamilton County 1994 Chattanooga, TN 37402	Total \$ 419.71
-----------------	--	-----------------

MAY 20 MISC A# 6.00 \* 6.00

This notice was prepared and signed at Chattanooga, TN on this,

the 16th day of May 1983

Signature	Title
J. B. GATES <i>[Signature]</i>	Revenue Officer 6733

(Notarized confirmation of officer authorized by law to take acknowledgements which is essential to the validity of Notice of Federal Tax Lien  
G.C.M. 28 CFR 1.1930-1, C.B. 723.)

Part I — To be kept by recording office

Form 688 (Rev. 1-8-82)

BOOK 2896 PAGE 239

Form 668 Rev. December 1982	Department of the Treasury - Internal Revenue Service <b>Notice of Federal Tax Lien Under Internal Revenue Laws</b>				
District Nashville	Serial Number C-83-393			For Optional Use by Recording Office <b>K 3 4 4 0</b>	
<p>As provided by sections 6321, 6322, and 6323 of the Internal Revenue Code, notice is given that taxes (including interest and penalties) have been assessed against the following-named taxpayer. Demand for payment of this liability has been made, but it remains unpaid. Therefore, there is a lien in favor of the United States on all property and rights to property belonging to this taxpayer for the amount of these taxes, and additional penalties, interest, and costs that may accrue.</p>					
<p>Name of taxpayer Henry F. Ziegler Jr. d/b/a Cedar Ridge Inn Apts</p>					
<p>Residence 28th &amp; Rossville Blvd Chattanooga, TN 37407</p>					
<p><b>IMPORTANT RELEASE INFORMATION</b> — With respect to each assessment set below, unless notice of lien is filed by the date given in column (e), this notice shall, on the day following such date, operate as a certificate of release as defined in IRC 6325 (a).</p>					
Kind of Tax (a)	Tax Period Ended (b)	Identifying Number (c)	Date of Assessment (d)	Last Day for Refiling (e)	Unpaid Balance of Assessment (f)
941	12-31-81	62-1126779	03-22-82	04-21-88	634.35
941	03-31-82	"	11-08-82	12-08-88	2,775.55
941	09-30-82	"	12-20-82	01-19-89	960.03
941	12-31-82	"	02-28-83	03-30-89	1,260.12
<b>Place of Filing</b> Register of Deeds Hamilton County 1994 Chattanooga, TN 37402					Total \$5,630.05

**T  
IDENTIFICATION  
REFERENCE**

MAY 20 8 01 AM '83

DOROTHY P. BRAMMER  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

This notice was prepared and signed at Chattanooga, TN on this

WY205 MISC A\* 6.00 \* 6.00  
the 17th day of May 1983

Signature

J. B. GATES

Title

Revenue Officer 6733

(Note: Certificate of officer authorized by law to take acknowledgements is not essential to the validity of Notice of Federal Tax Lien. G.C.M. 20419, 1950-1, C.B. 125.)

Part 1 — To be kept by recording office

Form 668 Rev. 12-82

BOOK 2896 PAGE 240

Form 688  
Rev December 1982

*Department of the Treasury - Internal Revenue Service*  
**Notice of Federal Tax Lien Under Internal Revenue Laws**

District  Nashville	Serial Number  C-83-396	For Optional Use by Recording Office  K 3 4 4 1			
<p>As provided by sections 6321, 6322, and 6323 of the Internal Revenue Code, notice is given that taxes (including interest and penalties) have been assessed against the following-named taxpayer. Demand for payment of this liability has been made, but it remains unpaid. Therefore, there is a lien in favor of the United States on all property and rights to property belonging to this taxpayer for the amount of these taxes, and additional penalties, interest, and costs that may accrue.</p>					
<p>Name of Taxpayer  Robert J &amp; June R Coulter</p>					
<p>Residence  17 Inglenook Dr. Chattanooga, TN 37411</p>					
<p><b>IMPORTANT RELEASE INFORMATION</b> — With respect to each assessment listed below, unless notice of lien is filed by the date given in column (e), this notice shall, on the day following such date, operate as a certificate of release as defined in IRC 6325 (a).</p>					
Kind of Tax (a)	Tax Period Ended (b)	Identifying Number (c)	Date of Assessment (d)	Last Day for Filing (e)	Unpaid Balance of Assessment (f)
1040	12-31-80	409-46-9553	02-07-83	03-09-83	3,764.76
Place of Filing  Register of Deeds Hamilton County 1994 Chattanooga, TN 37402					Total \$ 3,764.76

This notice was prepared and signed at UY208 MISC Chattanooga, TN on May 20, 1983.

The 18th day of May, 1983

Signature

S. M. RICHARDSON *S. M. Richardson*

Title

Revenue Officer 1716

(Master Certificate of officer authorized by law to take acknowledgements is not essential to the validity of Notice of Federal Tax Lien  
D.C.M. 20419, 1990-1, C.B. 125.)

Part 1 — To be kept by recording office

Form 688 Rev. 12-82

Form 668 Rev. December 1982	Department of the Treasury - Internal Revenue Service <b>Notice of Federal Tax Lien Under Internal Revenue Laws</b>				
District  Nashville	Serial Number  C-83-397			For Optional Use by Recording Office  K 3 4 4 2	
<p>As provided by sections 6321, 6322, and 6323 of the Internal Revenue Code, notice is given that taxes (including interest and penalties) have been assessed against the following-named taxpayer. Demand for payment of this liability has been made, but it remains unpaid. Therefore, there is a lien in favor of the United States on all property and rights to property belonging to this taxpayer for the amount of these taxes, and additional penalties, interest, and costs that may accrue.</p>					
<p>Name of taxpayer  SONYGH PC                    A Corporation</p>					
<p>Residence  714 Central Ave. Chattanooga, TN 37403</p>					
<p><b>IMPORTANT RELEASE INFORMATION</b> -- With respect to each assessment listed below, unless notice of lien is filed by the date given in column (e) this notice shall, on the day following such date, operate as a certificate of release as defined in IRC 6325 (a).</p>					
Kind of Tax (a)	Tax Period Ended (b)	Identifying Number (c)	Date of Assessment (d)	Last Day for Filing (e)	Unpaid Balance of Assessment (f)
941	09-30-82	62-0945383	12-06-82	01-05-89	4,001.15
Place of Filing Registrar of Deeds Hamilton County 1994 Chattanooga, TN 37402					Total \$ 4,001.15

This notice was prepared and signed at Chattanooga, TN on this \_\_\_\_\_  
 the 18th day of May 1983 MISC A\* 6.00 \* 6.00

Signature S. M. WREN SMW Revenue Officer 1714  
(Major or minor officer authorized by law to make acknowledgments is not essential to the validity of Notice of Federal Tax Lien  
G.C.M. 26417, 1720-1, C.B. 125.)

Att: Citizens Sav & Loan FULL RELEASE OF LIEN  
P.O. Box 1

BOOK 2896 PAGE 242

Attn: Mr. [unclear] 5/7/83  
**Description of Property:** The third civil district of Hamilton County, Tennessee. That part of the hereinafter described property that lies Eastwardly of the Eastern line of South Cemetery Road;

Original Note Amount \$ 2,892.24

CITIZENS SAVINGS & LOAN CORPORATION, 5004 Austin Road, Hixson TENNESSEE, declaring it was the true and lawful owner or holder at the time of payment of the indebtedness described in and secured by a lien in the Deed, Deed of Trust, and/or Mortgage from Dorothy A. Lockmiller and Aaron Lockmiller to Citizens Savings and Loan Corporation, 5004 Austin Road of record in Book 2802 page 518, in the Register's Office of Hamilton County, Tennessee, to which reference is hereby made, and hereby acknowledges the payment in full of said indebtedness and the satisfaction and discharge of said lien.

K 3443  
IN WITNESS WHEREOF, said Corporation has hereunto subscribed its name on this 2nd day of May 1983.

IDENTIFICATION  
REFERENCE

CITIZENS SAVINGS & LOAN CORPORATION

MAY 20 8 03 AM '83

BY Jane Gennoe DOROTHY P. GRIMMER  
REGISTER HAMILTON COUNTY  
STATE OF TENNESSEE

STATE OF TENNESSEE)  
COUNTY OF HAMILTON) 44202 MISC

A\* 3.00 + 3.00

On this the 2nd day of May 1983, before me personally appeared Jane Gennoe with whom I am personally acquainted, and who upon oath acknowledged himself to be the cashier of Citizens Savings and Loan Corporation, 5004 Austin Road and that he as such officer, being authorized so to do, executed the foregoing instrument for the purpose therein contained, by signing the name of the Corporation by himself as cashier.

Witness my hand and seal at office in Chattanooga, Tennessee this 2 day of May 1983.

Henry J. Rehse  
Notary Public

My Commission expires:

12/18/85  
Seal

This instrument was prepared by:  
Citizens Savings & Loan Corporation  
5004 Austin Road  
Hixson, Tennessee 37343

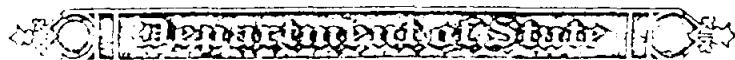
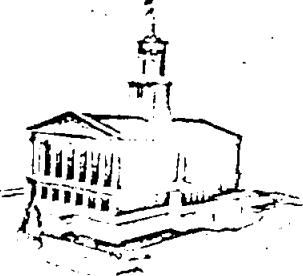
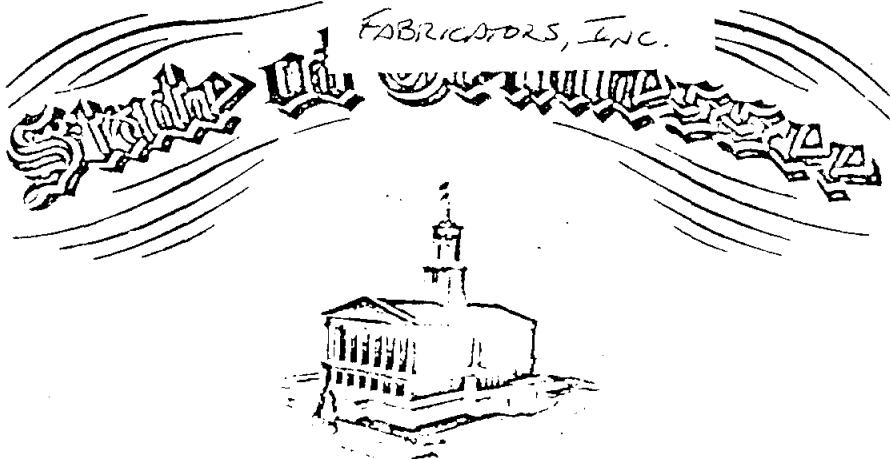
1971

CERT. OF INCORP.

CONCRETE FORM

FABRICATORS, INC.

BOOK 1965 PAGE 557



CERTIFICATE

The undersigned, as Secretary of State of the State of Tennessee, hereby certifies that the attached document was received for filing on behalf of CONCRETE FORM FABRICATORS, INC.

(Name of Corporation)  
was duly executed in accordance with the Tennessee General Corporation Act,  
was found to conform to law and was filed by the undersigned, as Secretary of  
State, on the date noted on the document.

THEREFORE, the undersigned, as Secretary of State, and by virtue of  
the authority vested in him by law, hereby issues this certificate and attaches  
hereto the document which was duly filed on May Nineteenth, 1971.



  
\_\_\_\_\_  
Secretary of State

May 19, 1971

BOOK 1965 PAGE 558

CHARTER OF A CORPORATIONOFCONCRETE FORM FABRICATORS, INC.

(a) The name of the corporation is:  
CONCRETE FORM FABRICATORS, INC.

(b) The duration of the corporation is perpetual.

(c) The address of the principal office of the  
corporation in this state is:

314 Hooker Road, Hamilton County,  
Chattanooga, Tennessee

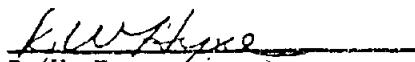
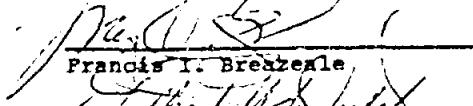
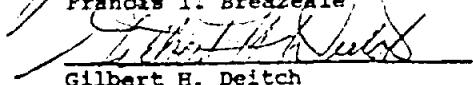
(d) The corporation is for profit.

(e) The purposes for which the corporation is organized  
are:

1. To engage in all types of steel fabrication.
2. To engage in all types of pre-casting.
3. To engage in subcontracting all types of form work.
4. To engage in the erection of all types of pre-cast  
materials and forms.
5. To engage in any other legal business.

(f) The maximum number of shares without par value that  
the corporation is authorized to issue shall be ten thousand  
(10,000) shares of common stock.

(g) The corporation will not commence business until  
consideration of not less than One Thousand Dollars (\$1,000.00)  
has been received for the issuance of shares.

  
R.W. Hyre  
Francis T. Breazeale  
Gilbert H. Deitch

INCORPORATORS

100-126-AW-161

Bureau, Bowd & Brugate  
attn: Mr. President  
1702 Antonia Rd. #112  
Nashville, Tenn. 37202



BOOK 1965 PAGE 559

CHARTER  
OF  
CONCRETE FORM FABRICATORS,  
INC.

RECEIVED FEE, \$ 10.00  
RECEIVED TAX, \$ 50.00  
TOTAL, \$ 60.00

A\* 5.00 \* 5.00

MISC

MISC

A 68044

IDENTIFICATION  
REFERENCE  
DOROTHY P. BAUMER  
REGISTER  
HAMILTON COUNTY  
STATE OF TENNESSEE

Mar 27 | 15 PM '71

Secretary of State.

110

JAN 16 1967

110-701:

THIS INSTRUMENT WAS PREPARED BY C. O. SMITH,  
ATTORNEY, 617 WALNUT ST., CHATT. TN. 37402

RECORDED JAN 16 1967  
TENNESSEE TAX ASSESSOR  
BAPTIST HOSPITAL

IN CONSIDERATION of Two Thousand and No/100 (\$2,000.00) Dollars, cash in hand paid, the receipt of which is hereby acknowledged and the execution by the grantee hereof of one (1) installment note of even date herewith for Eight Thousand and No/100 (\$8,000.00) Dollars, payable in monthly installments of Two Hundred Fifty and No/100 (\$250.00) Dollars each, the first installment being due and payable on or before one month from date and one installment, due and payable on or before each month thereafter until the sum of Eight Thousand and No/100 (\$8,000.00) Dollars on the principal and all interest thereon shall have been fully paid and satisfied, with interest from date at the rate of six per cent (6%) per annum, payable on the unpaid balance as each installment matures; it is expressly agreed that should any one of said installments or interest remain due and unpaid for thirty (30) days after maturity, then the remaining installments of said note and interest may be treated as due and payable, the payment of all of which is secured by a vendor's lien which is hereby retained on the real estate hereinafter described, and as better security for the payment of said note and to more easily enforce its collection the grantee has executed to The Title Guaranty and Trust Company of Chattanooga, Trustee, a deed of trust on said real estate, containing full power of sale, etc., but it is agreed and understood that an entry of the release of said note either on the margin of the recorded copy of this lien deed or of said deed of trust in the Office of the Register of Hamilton County, Tennessee, will release both the vendor's lien retained in this deed and the lien created by said deed of trust whether the said deed of trust be recorded or not; We, K. C. FITSCHEN and wife, MARIE M. FITSCHEN, do hereby sell, transfer and convey unto the CONCRETE FORMS CORPORATION, a corporation organized and existing under the Laws of the State of Tennessee, the following described real estate in the City of Chattanooga, Hamilton County, Tennessee:

being the east one hundred (100) feet of the property conveyed to K. C. Fitschen and wife, Marie M. Fitschen by deed recorded in Book 1562, page 286, in the Register's Office of Hamilton County, Tennessee, and being more particularly described as follows: BEGINNING at a stone monument in the southwest corner of East Forty-sixth (46th) Street (Hooker Road) and Carl Avenue (forty (40) feet wide); thence along the western line of Carl Avenue south twenty (20) degrees thirty (30) minutes west five hundred fifty-nine (559) feet to a stone monument being the southeast corner of the Fitschen tract; thence along the south line of said tract north sixty-nine (69) degrees thirty (30) minutes west one hundred (100) feet to a point; thence north twenty (20) degrees thirty (30) minutes east five hundred fifty-nine (559) feet to a stone monument in the south line of East Forty-sixth (46th) Street (Hooker Road); thence south sixty-nine (69) degrees thirty (30) minutes east along the south line of East Forty-sixth (46th) Street one hundred (100) feet to the point of beginning.

See deed recorded in Book 1562, page 286, in said Register's Office for prior title.

SUBJECT to any governmental zoning and subdivision ordinances or regulations in effect thereon.

SUBJECT to the right-of-way of Central of Georgia Railway Company and any additional widths for slopes and cutbanks as recorded in Book X, Volume 13, page 477, in said Register's Office.

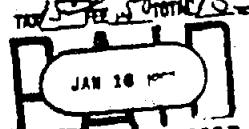
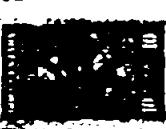
SUBJECT to the sewer easement set out in the deed to Wilson & Company, Inc., recorded in Book 581, page 406, in said Register's Office.

SUBJECT to railroad right-of-way as shown by survey.

Taxes for the year 1966 are to be prorated between the grantors and the grantee herein as of this date.

TO HAVE AND TO HOLD the same unto the said CONCRETE FORMS CORPORATION, a Tennessee corporation its successors and assigns, forever in fee simple. We covenant that we are lawfully seized and possessed of said real estate, have full power and lawful authority to sell and convey the same that the title thereto is clear, free and unencumbered, except as hereinabove mentioned, and we will forever warrant and defend the same against all lawful claims.

WITNESS our hands this 20th day of December, 1966.



K. C. Fitschen  
Marie M. Fitschen

This instrument was prepared by J. J. Ryan  
L & R. Rd. Co., 906 W. Broadway  
Louisville, Kentucky

JAN 15 1960  
J. H. SELLER, JR.  
P. D. F.

FOR AND IN CONSIDERATION of the sum of Ten Thousand Five Hundred Dollars (\$10,500.00) paid and to be paid by CONCRETE FORMS CORPORATION, a corporation of the State of ~~Tennessee~~, party of the second part, hereinafter called Grantee, as follows: Twenty-five Hundred Dollars (\$2,500.00) cash in hand paid, the receipt of which is hereby acknowledged, and for the unpaid balance the said Concrete Forms Corporation, Grantee, has executed and delivered its promissory note of even date herewith for the sum of Eight Thousand Dollars (\$8,000.00), payable to the order of the Louisville and Nashville Railroad Company, said sum to be paid in monthly installments of Two Hundred Dollars (\$200.00) each including principal and interest at the rate of six percent (6%) per annum until paid, and to secure the payment of said note and interest, a lien is hereby retained upon the land herein conveyed, LOUISVILLE AND NASHVILLE RAILROAD COMPANY, a corporation created and existing under the laws of the State of Kentucky, party of the first part, hereinafter called Grantor, has bargained and sold and by these presents does hereby bargain, sell, transfer, and convey unto Concrete Forms Corporation, its successors and assigns, two tracts of land in the City of Chattanooga, County of Hamilton, State of Tennessee, being more particularly described as follows:

TRACT No. 1 - Beginning at a point in the center line of Hooker Road, said point being in the most easterly corner of a tract of land conveyed to The Tennessee Property Company by C. E. James and wife by deed dated March 17, 1916, recorded in Book "Q", Volume 13, page 191, in the Register's Office, Hamilton County, Tennessee; thence South 22° 10' West along said center line of Hooker Road and the center line of Wilson Road a distance of two hundred ten and seventy-five hundredths (210.75) feet, more or less, to a point in the most southerly corner of said tract of land conveyed to The Tennessee Property Company as aforesaid; thence North 67° 24' West along the southwest line of the aforesaid conveyance passing a concrete monument at twenty-five (25) feet, in all a distance of five hundred ninety and five hundredths (590.05) feet to a point in the property line between the Grantor and the Central of Georgia Railway, said point being fifteen (15) feet measured southeastwardly at right angles from a point in the center line of the Central of Georgia's track; thence northeastwardly along said property line, fifteen (15) feet southeastwardly from and parallel to said center line of track a distance of three hundred eight and seventy-two hundredths (308.72) feet to a point in Grantee's south property line; thence South 67° 30' East along the property line between the Grantor and Grantee a distance of three hundred sixty-three and eighty-four hundredths (363.84) feet to the point of beginning, containing two and thirty-five hundredths (2.35) acres, more or less.

TRACT No. 2 - Beginning at a concrete monument in the property line between the Grantor and the Central of Georgia Railway, said point being fifteen (15) feet measured northwardly at right angles from a point in the center line of the Central of Georgia track, said point being in the southwest line of a tract of land conveyed to The Tennessee Property Company by C. E. James and wife by deed dated March 17, 1916, recorded in Book "Q", Volume 13, page 191, in the Register's Office of Hamilton County, Tennessee; thence North 67° 24' West, one hundred thirty and twenty-four hundredths (130.24) feet to a point, thence North 30° 46' West, ninety-eight and fifty-five hundredths (98.55) feet to a point; thence North 75° 01' West, one hundred thirty-one and eighty-six hundredths (131.86) feet to a point; thence North 71° 39' West, one hundred seventy-three and eighty-five hundredths (173.85) feet to a point; thence North 22° 30' East, fifteen and ninety-four hundredths (15.94) feet to a point; thence North 68° 21'

point; thence North 22° 30' East, one hundred sixty-nine and fifty-four hundredths (169.54) feet to a point in the property line between the Grantor and Grantee; thence South 67° 30' East along said property line, passing a concrete monument at four hundred one and forty hundredths (401.40) feet, in all a distance of four hundred forty-one and forty hundredths (441.40) feet to a point in the north corner of a tract of land conveyed to the Chattanooga Warehouse and Compress Company by The Tennessee Property Company by deed dated November 4, 1925; thence along said property line and the aforesaid conveyance the following courses and distances: South 22° 30' West, fifteen and fifty hundredths (15.50) feet; South 67° 30' East, two hundred four (204) feet; North 22° 30' East, fifteen and fifty hundredths (15.50) feet to a point in the east corner of said conveyance to the Chattanooga Warehouse and Compress Company; thence South 67° 30' East along the property line between the Grantor and Grantee, leaving said line of the conveyance to the Chattanooga Warehouse and Compress Company a distance of three hundred twelve and eighty-six hundredths (312.86) feet to a point in the Central of Georgia's northwest right of way line; thence southwestwardly along said northwest right of way line, fifteen (15) feet northwestwardly from and parallel to said center line of track a distance of two hundred ninety-nine and seventy-five hundredths (299.75) feet to the point of beginning, containing three and eighteen hundredths (3.18) acres, more or less.

The two above tracts of land being a part of the same property conveyed to The Tennessee Property Company by C. E. James and wife by deed dated March 17, 1916, recorded in Book "Q", Volume 13, page 191, in the Register's Office, Hamilton County, Tennessee, and being a part of the same property conveyed to the Louisville and Nashville Railroad Company by The Tennessee Property Company as Tract No. 8 in deed dated August 6, 1963, recorded in Book 1547, page 367, and a part of the same property acquired by the Grantor through merger between the Louisville and Nashville Railroad Company and The Nashville, Chattanooga & St. Louis Railway on August 30, 1957, the Agreement of Merger being recorded in Book 1285, page 423, in the office aforesaid.

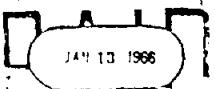
This conveyance is made subject to the reservations set out in said deed from C. E. James and wife to The Tennessee Property Company for rights for wagon roads parallel to East End Avenue across the property above conveyed at a point 1,300 feet and 1,900 feet east of East End Avenue. It is also subject to all rights of the Chattanooga Gas and Coal Products Company to lay a sewer across part of the land herein described under a permit granted on March 1, 1916, as mentioned in said deed.

This conveyance is also made subject to rights of way of Wilson Road and Hooker Road which cross the southeast end of Tract No. 1 hereinabove described.

The Grantee agrees to assume and be bound by all obligations assumed by the Grantor in deeds or contracts affecting the premises hereby conveyed, and to recognize any easements to which the above described premises are servient, whether such easements be apparent, or created by instruments of record, or otherwise.

Taxes for the year 1965 on the above described property will be prorated as of the date of deed.

TO HAVE AND TO HOLD the said tracts of land, with all the appurtenances thereunto belonging, to the Grantee, its successors and assigns, forever in fee simple, with covenant of General Warranty. AX/4 73 FILED 16 JAN 13 1966 23 JOIN



RECORD BOOK 1665

- 4 -

IN WITNESS WHEREOF, the Grantor has hereunto subscribed its name,  
this 1st day of July, 1965.

317

LOUISVILLE AND NASHVILLE RAILROAD COMPANY

By W. H. Kendall  
President

Attest:

C. Hayden Edwards  
Secretary



STATE OF KENTUCKY }  
JEFFERSON COUNTY }

Personally appeared before me, Virginia Stewart, a Notary Public in and for said State and County, W. H. Kendall and C. Hayden Edwards, with whom I am personally acquainted, and who upon oath acknowledged themselves to be the President and Secretary, respectively, of the Louisville and Nashville Railroad Company, a corporation, the within named bargainer, and that they as such President and Secretary, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation thereto by W. H. Kendall, as President, and attesting the same by C. Hayden Edwards, as Secretary, and affixing the corporate seal thereto.

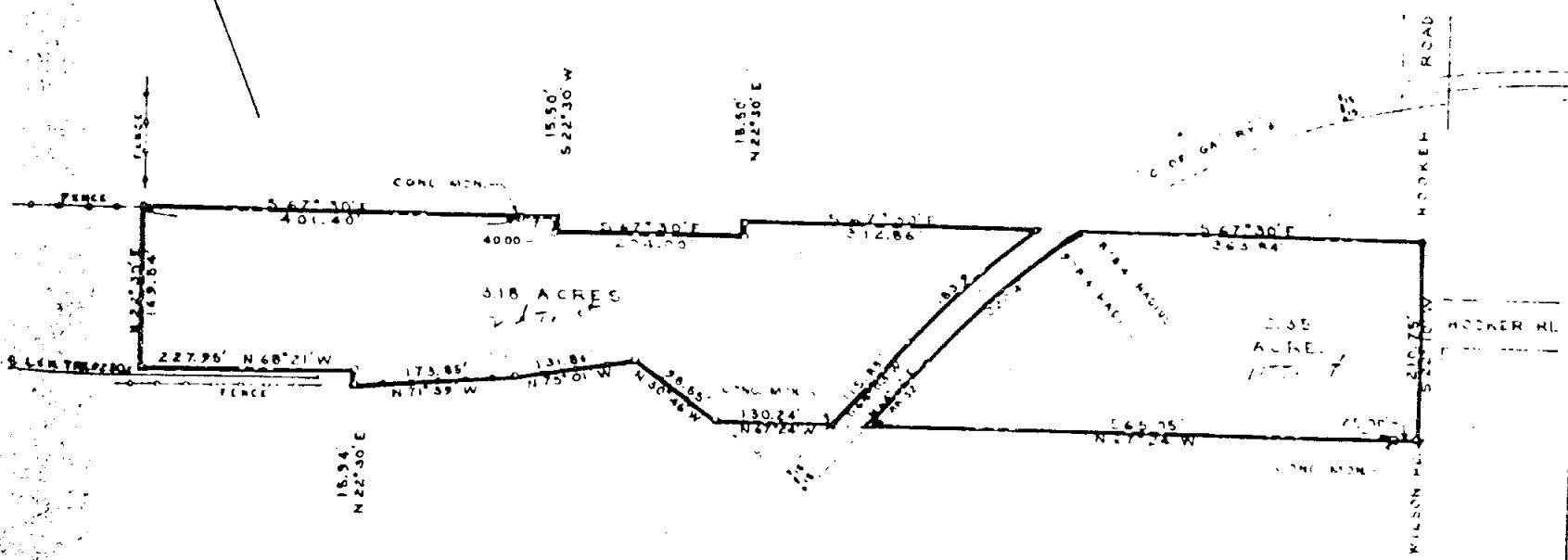
My commission expires My Commission Expires March 19, 1966.

Witness my hand and official seal at Louisville, Jefferson County, Kentucky, on this 1 day of July, 1965.

Virginia Stewart  
Notary Public, Jefferson County, Kentucky

NOTARY PUBLIC, JEFFERSON COUNTY, KY  
My Commission Expires March 19, 1966

CHATTANOOGA, TENN.  
ALTON PARK



SW  $\frac{1}{4}$  OF SECTION 10,  
T 6 S, R 4 W,  
OCOEE DISTRICT BASE LINE

HAMILTON COUNTY

L. & N. R. R. CO.  
WESTERN & ATLANTIC DIV. CHATTANOOGA, TENN.

5.53 ACRES OF LAND TO BE SOLD  
TO CONCRETE FORMS CORPORATION

OFFICE OF ASST. ENGR.  
SCALE 1" = 100'

CHATTANOOGA, TENN.  
FEBRUARY 10, 1955

3041-74

1963

Railway Easement  
Riverside & SMC  
TND, Inc.

PROMPT COPY NOT

LIAISON FOR FILMING

KUP  
THIS INDENTURE, made this 5th day of December, 1963, between  
CENTRAL OF GEORGIA RAILWAY COMPANY, a Georgia corporation, hereinafter  
styled Railroad, party of the first part;  
THE ALABAMA GREAT SOUTHERN RAILROAD COMPANY, an Alabama corporation,  
hereinafter styled Alabama Company, party of the second part; and  
SMC INDUSTRIES, INC., a Tennessee corporation, hereinafter styled  
Industry, party of the third part;

WITNESS I H:

THAT Railroad, for and in consideration of the sum of TWO HUNDRED  
EIGHTY DOLLARS (\$280) to it paid by Industry the receipt whereof is hereby ac-  
knowledged, does hereby quitclaim and convey unto SMC INDUSTRIES, INC., its  
successors and assigns, a right or way or easement for the construction, main-  
tenance and use of a road upon, across, at grade, and over the land of Railroad  
at CHATTANOOGA, Tennessee, more particularly described as follows:

A right of way or easement 40 feet in width for the construc-  
tion, maintenance and use of a road, the location and dimensions of  
which are substantially as shown in red on print of Drawing No.  
42765, dated October 28, 1963, heretounto annexed and made a part  
hereof;

RAILROAD, however, unto Railroad and Alabama Company and their res-  
pective successors and assigns, the right to continue to maintain, repair, renew  
and operate their railroad and appurtenances across said easement and to make  
such revision or relocation of their track and to construct such additional  
track or tracks and other railroad facilities across said easement and maintain,  
repair, renew and operate the same as in the judgment of Railroad and Alabama  
Company may be requisite.

TO HAVE AND TO HOLD the said right of way or easement to SMC INDUS-  
TRIES, INC., its successors and assigns, so long as it or they shall utilize  
the same for roadway purposes and for any time hereafter such use or said  
privilege is discontinued all rights in said premises hereby conveyed shall be  
extinguished and revert to Railroad and its successors and assigns.

INDUSTRY covenants and agrees, for itself and its successors and as-  
signs, unto and with Railroad and Alabama Company, their successors and assigns,  
as a covenant running with the easement hereby granted, and as a part of the  
consideration for this conveyance, said covenant being evidenced by the accept-  
ance and recordation of this indenture by Industry, that said property hereby  
conveyed will be utilized by Industry, its successors and assigns, in conjunc-  
tion with adjoining premises now or formerly of Industry, for the construction  
of a road on the aforesaid property and subject to the following terms and  
conditions:

1. Industry covenants for itself and its successors and assigns that  
said road will be used for ingress and egress to and from adjoining premises  
now or formerly of Industry and for no other purpose. Industry will construct  
and maintain said road without cost or expense to Railroad or Alabama Company  
upon said property of Railroad and over said track in such manner that the same  
shall not interfere with the use made or to be made of said property by Railroad  
and Alabama Company, and in accordance with plans and specifications approved  
by Railroad and Alabama Company.
2. No person other than Industry, its successors and assigns and its  
or their agents or employees, shall be permitted to use said road; Industry

hereby agreeing that said road shall be a private road for the use and conven-  
ience of Industry, its successors and assigns, and is not intended as a highway  
for the use of the public. To the end of preventing the use of said road by  
the public, Industry will, at the expense of Railroad and Alabama Company at  
any time during the life of this indenture, at such location or locations as may be  
designated by the proper officer of Railroad, a signboard or signboards clearly  
indicating that said road is for the private purposes of Industry, its suc-  
cessors and assigns.

3. Industry accepts the privileges hereby granted with full cogni-  
tance of the risk of loss of life, personal injury, or property loss or damage  
which may be caused by railroad operations of Railroad and Alabama Company at  
or in the vicinity of said road; and Industry covenants, with warranty of its  
authority so to do, that the privilege shall be used and enjoyed at the sole  
risk of Industry, its successors and assigns, Railroad and Alabama Company to  
have no responsibility in the premises; Industry hereby specifically agreeing,  
for itself and its successors and assigns, that it and they will indemnify and  
save harmless Railroad and Alabama Company, and each of them, from and against  
liability for any such loss, injury or damage, in connection with the use of  
said road, whether the same may result from the negligence of Railroad and  
Alabama Company, or either of them, or otherwise.

RECORD BOOK 1562

RECORD BOOK 1562

281

IN WITNESS WHEREOF, Central of Georgia Railway Company and The Alabama Great Southern Railroad Company have caused these presents to be executed, and their corporate seals to be hereunto affixed and attested, by their officers thereto duly authorized, as of the day and year first above written.

CENTRAL OF GEORGIA RAILWAY COMPANY,  
By

*E. D. Bostick*  
Executive Vice President.

L. S.  
ATTEST:

*M. M. McLaughlin*  
M. M. McLaughlin  
Secretary.

THE ALABAMA GREAT SOUTHERN RAILROAD  
COMPANY,  
By

*R. B. Curry*  
Vice President.

L. S.  
ATTEST:

*A. H. Daingerfield*  
A. H. Daingerfield  
Assistant Secretary.

STATE OF GEORGIA, )  
County of Columbia. )

Before me, Benjamin L. Bostick, a Notary Public in and for said County, personally appeared R. B. Curry, with whom I am personally acquainted, and who, upon oath, acknowledged himself to be Executive Vice President of Central of Georgia Railway Company, one of the within named bargaining, a corporation, and that he, as such Executive Vice President, being authorized so to do, executed the foregoing instrument for the purpose therein contained, by signing the name of the corporation by himself as Executive Vice President.

WITNESS my hand and seal, at office this 7th day of December, 1963.

*Benjamin L. Bostick*  
Notary Public, County of  
Columbia.

My commission expires January 1, 1964.

DISTRICT OF COLUMBIA.

Before me, Robert R. House, a Notary Public in and for the District of Columbia, personally appeared R. B. Curry, with whom I am personally acquainted, and who, upon oath, acknowledged himself to be Vice President of The Alabama Great Southern Railroad Company, one of the within named bargaining, a corporation, and that he, as such Vice President, being authorized so to do, executed the foregoing instrument for the purpose therein contained, by signing the name of the corporation by himself as Vice President.

WITNESS my hand and seal, at office in Washington, D. C., this 5th day of December, 1963.

*Robert R. House*  
Notary Public in and for the District  
of Columbia.

My commission expires November 14, 1964.



K.C. & M. FISCHER  
SAC INDO, INC  
70  
*1963*

283

MANUFACTURED DEC 27 1963

G34541

I. H. SIEVER, Jr., Asst.

IN CONSIDERATION of the sum of One Dollar (\$1.00), cash in hand paid, and other good and valuable considerations, the receipt of which is acknowledged, including the sum of Twenty Thousand and No/100 Dollars (\$20,000.00), evidenced by purchase money note, of even date, executed by the Grantor herein, to the order of Grantee, maturing Four Thousand Dollars (\$4,000.00) annually, beginning one year from date, bearing interest from date at six per cent (6%) per annum, payable annually on the unpaid principal balance, with full privilege of prepayment, or any annual instalment, at any time, with interest accrued thereon to date of payment, to secure payment of which note, a VENDOR'S LIEN is expressly retained on the hereinabove described Real Estate and to further secure payment of said note and more easily enforce its collection, the said Grantees have executed simultaneously herewith a DEED OF TRUST to Milligan-Reynolds Guaranty Title Agency, Inc., Trustee, bearing the record of this Deed, or of the Deed of Trust, in the Register's Office of Hamilton County, Tennessee, will operate as a release and discharge of both the Vendor's Lien herein retained, and the lien created by said Deed of Trust, whether it is of record or not;

S. M. C. INDUSTRIES, INC., a Tennessee Corporation, does hereby sell, transfer and convey unto K. C. FISCHER and wife, MARIE M. FISCHER, the following described Real Estate:-

IN THE CITY OF CHATTANOOGA, HAMILTON COUNTY, TENNESSEE: Being situated at a stone monument in the Southwest corner of East 46th Street (Hoover Road) and Carl Avenue (40 feet wide); thence along the West line of Carl Avenue South 20 degrees 30 minutes West 559 feet to a stone monument; thence along the South line of Wilson & Co., Inc., tract, North 69 degrees 30 minutes West 401.40 feet to a fence post corner; thence North 19 degrees 52 minutes East 42.8 feet to corner of concrete loading dock of Box factory; thence along corner of concrete loading dock South 69 degrees 30 minutes West 138.83 feet to a nick on metal plate; thence on a line running midway between Box factory and refining building North 20 degrees 21.31 minutes East 104.5 feet to a nick in metal plate; thence along the North edge of concrete loading dock South 69 degrees 30 minutes East 139.43 feet to an iron pipe; thence South 20 degrees 30 minutes West 7.35 feet to a cross in concrete; thence parallel to and 15 feet South of existing track South 69 degrees 33 minutes South 300 feet to an iron pipe corner; thence parallel to Carl Avenue North 20 degrees 30 minutes East 419.6 feet to a stone monument in the South line of East 46th Street (Hoover Road); thence South 69 degrees 30 minutes East along the South line of East 46th Street (Hoover Road) 100 feet to a stone monument, the point of beginning and containing 26.51/2 acres, all as shown on Betteck Engineering Co., Inc., Deed #22-A-34, dated October 2, 1947, last revised November 1, 1948.

RESERVING AND RETAINING unto S. M. C. Industries, Inc., its successors or assigns, the full right and privilege to construct, erect and maintain foundations and steel or crane to go over the railroad, on two parcels of land, each to be 10 feet in length along the South side of the right-of-way of the railroad, measured East and West, and 4 feet in width, extending Southwardly from the South side of the railroad right-of-way, measured North and South, the first of said two parcels of land being located approximately 60 feet Eastwardly of the West end of the line or call in the description above set forth that reads "thence parallel to and 13 feet South of existing track South 69 degrees 33 minutes East 300 feet to an iron pipe corner"; and the second of said two parcels of land to be located 50 feet Eastwardly along said line or call from the West line of the first of the said two parcels of land, the same to be an easement appurtenant to remaining lands now owned by S. M. C. Industries, Inc., and to constitute a covenant and easement running with the land, EXCEPTING from the property hereinabove described the tracts or

strips of land through said property heretofore sold to Central of Georgia Railway Company, as shown by instrument recorded in Book X, Vol. 13, page 477, in the Register's Office of Hamilton County, Tennessee, and being right-of-way now in use by Central of Georgia Railway Company and The Alabama Great Southern Railroad Company.

TOGETHER WITH driveway and parking easement, as hereinafter more fully set forth, in and upon the following described tract of land: BEGINNING at a point in the South line of East 46th Street (Hoover Road), said point being North 66 degrees 30 minutes West 543 feet from the Southeast intersection of East 46th Street (Hoover Road) and Carl Avenue; thence along the East line of a 17-foot brick driveway South 20 degrees 30 minutes West 339.3 feet to a point, thence South 69 degrees 20 minutes East 183 feet to a point in the West line of Tract 2A; thence along the West line of Tract 2A South 20 degrees 30 minutes West 73 feet to an iron pin heretofore described in Tract 2C and being at the Northeast corner, more or less, of box factory mentioned in this description; thence North 69 degrees 30 minutes West 200 feet to a point; thence North 69 Northeastwardly direction along the West line of brick driveway North 20 degrees 30 minutes East 412.3 feet to a point in the South line of East 48th Street (Hoover Road); thence along the South line of East 46th Street (Hoover Road) South 69 degrees 30 minutes East 17 feet to the point of beginning. All as shown on Beta Engineer Co., Inc. Dwg. 4222A-3R, dated October 2, 1947, last revised November 1, 1963.

The western 17 feet of said parcel of land comprises a brick driveway, which is subject to the right to pass and repass, over and upon, and to use, together with others, said strip of land 17 feet wide fronting on Hoover Road and extending southerly to the Southern West line of said parcel of land, and herein granted to use said strip of land for such purposes, and express, by foot or vehicle, to and from Hoover Road, for all lawful purposes connected with the use and enjoyment, by owners or occupants, their successors and assigns, of land adjacent to and abutting said strip of land, as has been hereinbefore stipulated, created and provided, and the right is to reach the remaining portion of the parcel of land, as hereinabove described; further, the full right and privilege of common use, with SMC Industries, Inc., its successors or assigns, of the remaining portion of said hereinabove described parcel of land, being 173 feet in width and 143 feet in length, as a common trucking area, the same to be for the common use and benefit of the said SMC Industries, Inc., its successors or assigns, as owner or proprietor adjoining the same, and the owners and occupants of the tract of land hereinabove first described, to which the same is an appurtenant easement, and with right of ingress and egress across and upon the same;

FURTHER, a right-of-way or easement 40 feet in width for the construction, maintenance and use of a road, the location and dimensions of which are substantially shown in red on print of Drawing No. 42783, dated October 28th, 1963, annexed to and made a part of right-of-way conveyance from Central of Georgia to SMC Industries, Inc., dated December 5th, 1963, the said parcel of land being approximately 40 feet in length East and West, and 30 feet in width North and South, lying adjacent to and East of the common parking and trucking area hereinabove described and set forth, and along a Northern boundary line of the tract of land hereinabove first described, all as will appear by reference to said instrument executed by Central of Georgia Railway Company, et al., dated December 5th, 1963, which will hereafter appear of record in the Register's Office of Hamilton County, Tennessee, together with all rights and privileges therin stipulated, provided and set forth, and SUBJECT TO all reservations and rights by Central of Georgia Railway Company and The Alabama Great Southern Railroad Company thereunder, the terms, conditions and provisions of said instrument being by referenced incorporated in and made a part hereof.

REFERENCE is made for prior title to Book 1533, page 22, of the Register's Office of Hamilton County, Tennessee,

SUBJECT TO Governmental zoning and subdivision ordinances or regulations in effect theron.

TO HAVE AND TO HOLD the said described Real Estate unto the said K. C. Fletcher and wife, Marie M. Fletcher, their heirs and assigns, forever in fee simple.

SMC INDUSTRIES, INC., covenants that it is lawfully entitled and possessed of said described Real Estate; has good right and lawful authority to sell and convey the same; that the title thereto is clear, free and unencumbered, excepting as herein set out; and it will forever warrant said defendant the same against all other lawful claims.

# **POOR LEGIBILITY**

**PORTIONS OF THIS DOCUMENT  
MAY BE UNREADABLE, DUE TO  
THE QUALITY OF THE  
ORIGINAL**

Site No. TND 003328960  
Ref. No. 7

U. S. DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

PROPERTIES AND HAZARDS OF

108 SELECTED SUBSTANCES

Jeffrey E. Lucius, Gary R. Olhoeft,  
Patricia L. Hill, and Steven K. Duke

U.S. Geological Survey

Open-File Report 89-491

August 1989

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards. Any use of trade names is for descriptive purposes only and does not imply endorsement by the U.S. Geological Survey.

Site No. TND 003328960  
Ref. No. 8



STATE OF TENNESSEE  
DEPARTMENT OF PUBLIC HEALTH  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406

March 19, 1985

Mr. John Gourley  
Concrete Forms Corporation  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: Inspection Under the Tennessee Hazardous Waste Management Act  
TND-00-332-8960

Dear Mr. Gourley:

This letter confirms the observations and/or recommendations which were made during the Hazardous Waste Inspection concerning your facility on March 11, 1985.

No violations of the regulations promulgated under the authority of the Tennessee Hazardous Waste Management Act were noted. A copy of the Hazardous Waste Inspection Report is attached for your information and review.

If you desire any assistance or need clarification, please feel free to contact me at (615) 624-9921.

Sincerely,

*Burl H. Maupin*

Burl H. Maupin  
Environmental Engineer  
Division of Solid Waste Management

BHM:pph  
Enclosure

cc: Division of Solid Waste Management, Nashville

## INSPECTION REPORT

### 1. Site Operation Inspected:

Concrete Forms Corporation  
IND-00-332-8960  
314 Hooker Road  
Chattanooga, TN 37410  
Hamilton County

### 2. Primary Contact:

Mr. John Gourley  
314 Hooker Road  
Chattanooga, TN 37410

### 3. Date and Time of Inspection:

March 11, 1985  
3:00 - 9:00 a.m.

### 4. Report Prepared By:

Burl H. Maupin, Environmental Engineer  
Tennessee Department of Health and Environment  
Division of Solid Waste Management (DSWM)  
2501 Milne Street  
Chattanooga, Tennessee 37406  
(615) 624-9921

### 5. Names and Affiliations of Other Inspection Participants:

Mr. Mickey Schrudder

### 6. Purpose of Inspection:

To evaluate the Moccasin Printing Company's compliance with applicable generator requirements of the Rules Governing Hazardous Waste Management in Tennessee.

### 7. Facility Description:

#### Nature of business:

Scaffolding (SIC 3446)  
Concrete Forms (SIC 3272)

INSPECTION REPORT  
Concrete Forms Corporation

Hazardous waste generated:

Paint Sludge (D001)

Inspection status:

Small quantity generator.

8. Inspection findings:

No violations were observed.

Signed Bruce H. Maupin

Date March 19, 1985

cc: Division of Solid Waste Management, Nashville

Site No. TND 003328960  
Ref. No. 9

TENNESSEE DEPARTMENT OF HEALTH & ENVIRONMENT  
DIVISION OF WATER POLLUTION CONTROL  
CHATTANOOGA FIELD OFFICE  
PUBLIC INPUT FORM

Input No.: 90-261

Type of Input:  
Fish Kill Spill  
Complaint  R/A \_\_\_\_\_ Other \_\_\_\_\_

Date Rec'd.: 5-31-90

Time: 1:45

Refer to Input No. \_\_\_\_\_

Rec'd. By: TDM

Received  
From: Anonymous

Person to  
Contact: \_\_\_\_\_

Company: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Telephone: \_\_\_\_\_

Location of Problem/Address: Landes Company - 314 Hooker Rd.

County: Hamilton

Stream: \_\_\_\_\_

County: Hamilton

Nature of problem, request, or notification: The caller reported that the Landes Company operated a "strip blast" facility in which large lead balls covered with foundry sand cover the entire area. He said rainfall runoff reaches Chattanooga Creek and also soaks into the ground. The caller also said that the company periodically dumps paints, thinners, and concrete cleaners

Action Committed To:

(Continued, see page(s) 2 Attached)

N/A \_\_\_\_\_ Investigate \_\_\_\_\_ Refer \_\_\_\_\_ When? \_\_\_\_\_

Referred To: \_\_\_\_\_

Signature: TDM Date: 5-31-90

Follow-Up Assigned To: \_\_\_\_\_

Assigned By: \_\_\_\_\_ Date: \_\_\_\_\_

Follow-Up Complete: \_\_\_\_\_ Date: \_\_\_\_\_

CC: \_\_\_\_\_

CC: \_\_\_\_\_  
bjd/36010020

onto the grounds of their property. The caller said that he was associated with the plant and has first hand knowledge of these violations. He asked that soil samples be taken of the strip blast facility. He also said the creek was already posted in this area but that he was concerned about fish being contaminated with lead.

The caller said he had reported these problems to the owners, but they took an "I don't care" attitude. The owners are reportedly out of Texas and not concerned with this area from an environmental standpoint.

The caller was told that this information would be passed on to the proper personnel.

(continued, see page(s) \_\_\_\_\_, attached)

Signature: Leena Myers Date: 5-31-90

Site No. TND 003328960  
Ref. No. 10

CERTIFIED MAIL #795 926 671  
RETURN RECEIPT REQUESTED



STATE OF TENNESSEE  
DEPARTMENT OF HEALTH AND ENVIRONMENT  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406-3399

August 31, 1990

Mr. Russell W. Landes  
Landes Company, Inc.  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: Followup Inspection under the  
Tennessee Hazardous Waste  
Management Act relative to  
the June 18, 1990 N.O.V.  
NNF-33-105-0123

Dear Mr. Landes:

This letter confirms the observations and/or recommendations which were made during the hazardous waste follow-up inspection concerning your facility on August 29, 1990. (See attached Inspection Report)

Observations and documents reviewed during our followup inspection revealed violations outlined within the June 18, 1990 N.O.V. corrected.

In regards to the area across the railroad tracks referred to as the sandblasting area, this will be addressed in future correspondence.

If you desire assistance or need clarification regarding this transmittal, please feel free to contact me at 615/624-9921.

Cordially,

A handwritten signature in black ink, appearing to read "Guy M. Moose".

Guy M. Moose  
Regional Director/Env. Specialist  
Division of Solid Waste Management

GMM/ph

cc: DSWM, Nashville, Bob Vaughan  
cc: Hal Shook, Landes Company

INSPECTION REPORT

1. Site/Operation Inspected:

Landes Company, Inc.  
NNF-33-105-0123  
314 Hooker Road  
Chattanooga, Tennessee 37410  
Hamilton County

2. Primary Contact:

Mr. Russel W. Landes, President  
314 Hooker Road  
Chattanooga, Tennessee 37410  
(615) 821-6013

3. Date and Time of Inspection:

August 30, 1990  
10:00 AM - 11:00 AM

4. Report Prepared By:

Guy M. Moose, Regional Director  
Tennessee Department of Health and Environment  
Division of Solid Waste Management  
2101 Milne Street  
Chattanooga, Tennessee 37406  
(615) 624-9921

5. Names and Affiliations of Other Inspection Participants:

Hal Shook, Landes Company

6. Purpose of Inspection:

To evaluate Landes Company, Inc.'s compliance with the applicable generator requirements of the Rules Governing Hazardous Waste Management In Tennessee.

7. Facility Description:

Nature of Business:

Metal Construction Projects-Job Shop  
Produces metal forming systems, welding metal fabricators,  
machines and painting.

Types and Amounts of Hazardous Waste Generated:

Petroleum Naphtha  
Less than 100 kg/month

Landes Company Inspection Report

August 31, 1990

Page 2

Facility Status:

Conditionally Exempt Small Quantity Generator

8. Inspection Findings:

As a result of the inspection 1,490 lbs of hazardous waste was stored on site.

Signed: S. M. Moon.

Dated: 08-31-1990

Site No. TND 003328960  
Ref. No. 11

CERTIFIED MAIL #795 926 686  
RETURN RECEIPT REQUESTED



STATE OF TENNESSEE  
DEPARTMENT OF HEALTH AND ENVIRONMENT  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406-3399

January 14, 1991

Mr. Russell Landes, President  
Landes Company, Inc.  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: NOTICE OF VIOLATION Under the  
Tennessee Hazardous Waste  
Management Act (TCA 68-46, Part 1,  
Sections 101 - 119)  
Landes Company, Inc.  
NNF-33-105-0123

Dear Mr. Landes:

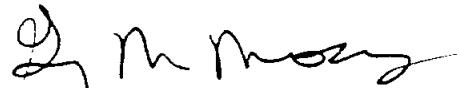
In response to a complaint received by the Division of Solid Waste Management, a site visit ensued on June 14, 1990. Observations during our investigation revealed an illegal waste disposal site/waste pile (foundry sand/baghouse dust) within the vicinity of the Landes Company's sand blasting rig. Therefore, the Division of Solid Waste Management collected samples on November 15, 1990, to determine if the waste observed was hazardous (samples split with Landes Company, Inc.). Analytical results received from the DSWM laboratory revealed the foundry sand/baghouse dust disposed of on the facility's premises to meet the definition of a D008 hazardous waste. Therefore, the DSWM must allege that the facility violated Rule 1200-1-11-.07(1)(b)1 of Tennessee's hazardous waste regulations by illegally operating a hazardous waste disposal facility.

Landes Company, Inc. must initiate efforts to bring the facility in compliance by closing the disposal area in accordance with Rule 1200-1-11-.05 of the aforementioned regulations. To accomplish this Landes Company, Inc. must:

1. Immediately cease disposal of all hazardous waste on-site.
2. Immediately contain hazardous waste piles as to eliminate migration of such.
3. Immediately submit hazardous waste notification with regard to the above waste as per Rule 1200-1-11-.03(2)(b)
4. On or before February 28, 1991, Landes Company, Inc. must submit a Closure/Post Closure plan to the Commissioner of Health and Environment. This plan must address all applicable requirements of Rule 1200-1-11-.05(7) and (14)e. Additionally, Landes Company, Inc. must submit documents to demonstrate compliance with the financial requirements of Rule 1200-1-11-.05(8).

If you desire any assistance or need clarification regarding this correspondence, please feel free to contact me at (615) 624-9921.

Cordially,



Guy M. Moose  
Regional Director  
Division of Solid Waste Management

GMM/31010014

cc: DSWM, Nashville File #33-366  
cc: DSWM, Nashville, Bob Vaughan, Enforcement Section  
cc: Javier Garcia, USEPA, Region IV, Atlanta, GA

Site No. TND 003328960  
Ref. No. 12

a return receipt  
gummed ends. Enclosed  
you want the a  
RECEIVE ONLY  
is request  
receipt of



STATE OF TENNESSEE  
DEPARTMENT OF PUBLIC HEALTH  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406  
December 17, 1982

LAUREL TRW 16  
JDN 11M  
SLA 303  
JFP 211  
Date Address Response To AZF 1/13  
Division of Water Quality Control  
Chattanooga Basin Office  
2501 Milne Street  
Chattanooga, TN 37406  
CERTIFIED MAIL

RC  
12/18  
1/11  
1/12  
File

Concrete  
Forms Corp.  
STP 1982  
(Hamilton)

Set up file  
(Yellow - THB) J

Mr. Daniel Horsman, President  
Concrete Forms Corporation  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: Notice of Violation  
1977 Tennessee Water Quality Control Act

Dear Mr. Horsman:

This letter conveys the results of my inspection at your plant on November 16, 1982. While there, I met with Mr. Dan Horsman, Mr. Jim Moore, and Mr. Mickey Schrudder. I also took bacteriological samples of surface water at various locations at your plant as shown on the enclosed map. The locations were the same as those sampled during our June 3, 1981 inspection, and a comparison of the results for fecal coliform bacteria are as follows:

SAMPLE POINT NUMBER	STRUCTURE SAMPLED	FECAL COLIFORM COLONIES PER 100 ml. of SAMPLE	
		1981 Results	1982 Results
1	Storm sewer outlet	2,700	30,000*
2	Storm sewer catch basin	41,000	420
3	Storm sewer catch basin	7,600	188
4	Sink drain catch basin	65	12
5	Open pit	Not Sampled	100*
6	Off-site drainage ditch	Not Sampled	27*

\*Standing water, no flow.

The 1981 inspection revealed that at least one direct discharge of domestic sewage was entering the storm sewer at the catch basin at point No. 2. Also, the levels of fecal coliform bacteria at points 1 and 3 indicated the existence of contamination to the surface water drainage ditches through your plant property from septic tank/field line systems adjacent or under the Assembly and Pan Buildings. The contamination was a violation of the referenced State Law and your company was asked to correct the problems as discussed in our letter of July 23, 1981, to Mr. Dan Horsman (copy enclosed). Mr. Horsman's reply to this office (in his August '81 letter) was that the restroom discharges would be connected to the Chattanooga Sanitary Sewer System by October 31, 1981.

Niel Horsman, President

September 17, 1982

Page Two

Unfortunately, the discharges were not connected to the City's systems as I learned during my recent inspection at your facility. Although the one discharge monitored at point 2 was connected to a new septic tank, domestic sewage was observed still entering the catch basin at that location. Further, the samples and observations revealed that contamination remains high at point 1. The results at point 3 are inconclusive since the sample was taken from standing water and may not have been able to show effects from field line leachate under such conditions. However, the sample taken from flowing water in the 1981 investigation clearly indicated the presence of sewage at point 3.

Mr. Horsman and Mr. Moore told me that the reason the discharges were not connected to the City's sanitary sewer was that the 21 inch line along Hooker Road was under "private ownership" and not available to your company. However, apparently no effort was made to contact the owner and to gain permission for its use. I reminded you that → the City owns a major interceptor along Wilson Road on your company's eastern property line and connection to that line should only be a matter of securing a permit from the City.

It is still the Division of Water Quality Control's position that the contamination from the sources to the State's waters and the resulting violation of the Water Quality Control Act must be stopped. Further, the discharge of the cooling water from the steel welder without a Permit from this Division is also a violation of the Act. We still believe that the best solution to these problems is for your company to connect all its restroom discharges to the Chattanooga Sanitary Sewer System. The cooling water discharge will also be required to obtain a Permit if it is not eliminated.

→ Please advise this office within thirty (30) days of your company's intentions and schedule for correcting the violations discussed in this letter. If you desire a Permit for the cooling water discharge, we will send you the necessary applications. If you plan to try to correct the sewage problems by installing new field line systems, then you must provide evidence that all work has been done in compliance with the approval of the Hamilton County Health Department.

If you have any questions regarding the matters discussed in this letter, please do not hesitate to call me at 624-9927.

Sincerely,



Philip L. Stewart  
Assistant Basin Manager  
Chattanooga Basin Office  
Division of Water Quality Control

PLS/ss

enclosures

cc: Hamilton County Health Department, c/o Dr. Frank Failings  
cc: Chattanooga Interceptor Sewer System, c/o Mr. Eugene Wright  
cc: Division of Water Quality Control, Nashville, c/o Bob Slayden and Paul Davis  
bc: Southeast Regional Health Office





SC

STATE OF TENNESSEE  
DEPARTMENT OF PUBLIC HEALTH  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406

Please Address Horsman To  
Division of Water Quality Control  
Chattanooga Basin Office  
2501 Milne Street  
Chattanooga, TN 37406

July 23, 1981

Mr. Dan Horsman, Vice President Manufacturing  
Concrete Forms Corporation  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: Domestic Sewage Discharges;  
Tennessee Water Quality Control Act

Dear Mr. Horsman:

As you know, this office has been investigating apparent sanitary sewer leaks and discharges at your plant. We have met with Mr. Jim Moore, Maintenance Supervisor, and he has shown us the storm sewer system, septic tank and field line areas, as well as locations of the restrooms which serve your plant. In addition, we have collected samples of the water at the four locations shown on the accompanying map attached to this letter. We have concluded from the results of these investigations that there are at least two direct sanitary wastewater discharges into the storm sewer system as well as apparent infiltration of wastewater from the field line absorption areas into the storm sewers.

Please refer to the map and note that the samples taken at points 1, 2, and 3 contained very high levels of fecal coliform bacteria, which indicate the water at these points is contaminated with sanitary sewage. The levels of fecal coliform bacteria found at sample points 1, 2, and 3 were 2,700, 41,000, and 7,600 per 100 milliliters of sample, respectively. The sample at point 2 was actually taken from the outlet of a 4 inch cast iron pipe draining into the catch basin (indicated as C.B. on the map), and we suspect this pipe is connected to the sanitary drains from the restrooms serving the new office area. Water at sample point 3 is apparently being contaminated by the field line area just upstream. The catch basin at point 4 is receiving a discharge from the sinks in the adjacent restroom. Although the contamination observed at point 1 may be partially attributed to the restroom discharge into the catch basin at point 2, it is likely that leachate from the field lines underneath the building is also adding to the problem. The relatively deep catch basins, storm sewer, and the deep drainage ditch at point 2 would tend to promote subsurface drainage from the field line into the storm water drainage system.

The danger to public health from the sewage discharges and field line leachate described above is obvious. We feel that the best solution to this problem is for your company to connect all of the discharges from the restrooms at the plant to the Chattanooga Sanitary Sewer System. The City has informed us of the existence of a "private" 21 inch sewer line along Hooker Road, which connects to the City's Interceptor Sewer System at Wilson Road. It may be

Mr. Dan Horsman, Vice President, Manufacturing  
July 23, 1981  
Page Two

possible for the sewer connections to be made to this line, or you could run a line to the Wilson Road Interceptor. A third possibility would be to connect to the Chattanooga Coke and Chemical sewer which crosses your property, but this connection could only be made after assurances are received from the coke plant that the line can hydraulically handle the expected flows without overflow.

Another possible solution to the sewage problem is for you to work with the Hamilton County Health Department to upgrade or relocate the septic tank and field line systems (or storm sewers) so that contamination to the storm sewers is prevented. In order for this approach to be acceptable to this Division, you must provide evidence that all work has been completed with the approval of the County Health Department.

Positive action must be taken to eliminate the sewage contamination to the storm sewers, as this constitutes a public health hazard as well as pollution of the State's waters. Please inform this office within thirty (30) days of your receipt of this letter as to plans for correcting the noted problems. We are requesting that all work be completed by October 30, 1981. In the meantime, please call if you have any questions.

Sincerely,



Philip L. Stewart  
Environmental Engineer  
Division of Water Quality Control

PLS/ss

attachment

cc: Division of Water Quality Control, Nashville, c/o Ken Bunting  
cc: Hamilton County Health Department, c/o Dr. Frank Failing  
cc: Chattanooga Interceptor Sewer Systems, c/o Eugene Wright  
cc: Southeast Regional Health Office

Site No. TND 003328960  
Ref. No. 13



STATE OF TENNESSEE  
DEPARTMENT OF HEALTH AND ENVIRONMENT  
SOUTHEAST REGIONAL OFFICE  
2501 MILNE STREET  
CHATTANOOGA, TENNESSEE 37406

May 15, 1984

TYLX-124  
JFF 6/12 RC  
JLC 5/15  
EOS 6-4 JRM 5/16 1/V  
WLS 6/13 PLS 5/17  
LP 5/23 AZF 6/24  
JOH 5/24  
FILE  
CONCRETE FORMS  
CORP STY (INACTIVE)  
7/1984

Mr. Daniel Horsman, President  
Concrete Forms Corporation  
314 Hooker Road  
Chattanooga, Tennessee 37410

Re: 1977 Tennessee Water Quality Control  
Act; Hamilton County

Dear Mr. Horsman:

Enclosed is the latest and, we hope, final report dealing with the problem of domestic sewage in the plant surface water drainage system.

We are pleased that we can confirm the satisfactory connections of the sanitary wastewater discharges at your plant to the municipal sewer system. The attached report provides evidence which indicates the absence of domestic sewage in the plant surface water drainage system. With completion of this work, it now appears that your facility is in compliance with the provisions of the referenced Act.

Our thanks go to you and your staff for their cooperation and assistance. If you have any questions, please call us at 624-9921.

Sincerely,

Philip L. Stewart  
Assistant Basin Manager  
Chattanooga Basin Office  
Division of Water Management

PLS/EOS/tdm

cc: Hamilton County Health Department, c/o Dr. Frank Failing  
cc: Chattanooga Interceptor Sewer System, c/o Mr. Eugene Wright  
cc: Division of Water Management, Nashville, c/o Bob Slayden and Paul Davis  
cc: Southeast Regional Health Office  
cc: Chattanooga Interceptor Sewer System, c/o Mr. George Kurz

Site No. TND 003328960  
Ref. No. 14

## EXPLANATION OF FEDERAL STATUS DESIGNATIONS

### FEDERAL STATUS, DETERMINED BY THE U. S. FISH AND WILDLIFE SERVICE<sup>1</sup>

LE - Taxa formally listed as endangered

LT - Taxa formally listed as threatened

PE - Taxa proposed to be formally listed as endangered

PT - Taxa proposed to be formally listed as threatened

S - Synonyms

C 1 - Taxa for which the Service has on file substantial information on biological vulnerability and threat(s) to support the appropriateness to list them as endangered or threatened species. Included are those taxa whose status in recent past is known, but may have already become extinct. Such possibly extinct taxa are indicated by an asterisk (\*). Double asterisk (\*\*) indicate taxa believed to be extinct in the wild, but known to be extant in cultivation.

C 2 - Taxa for which information now in possession of the Service indicated proposing to list them as endangered or threatened is appropriate, but for which substantial data on biological vulnerability and threat(s) are not currently known or on file to support a proposed rule. Such possibly extinct taxa are indicated by an asterisk (\*). Double asterisk (\*\*) indicate taxa believed to be extinct in the wild, but known to be extant in cultivation.

C 3 - Taxa that are no longer being considered for listing as threatened or endangered species. The following subcategories are used to further indicate the reason(s) for removal from consideration.

3A - Taxa for which the Service has persuasive evidence of extinction or being destroyed. If rediscovered, such taxa might acquire high priority for listing.

3B - Names that on the basis of current taxonomic understanding do not represent taxa meeting the Act's definition of "species." Such proposed taxa could be reevaluated in the future on the basis of subsequent research.

3C - Taxa that have proven to be more abundant or widespread than was previously believed and/or those that are not subject to any identifiable threat.

NOTE: The taxa listed in Categories 1 or 2 may be considered candidates for addition to the list of Endangered and Threatened plants, and, as such, consideration should be given them in environmental planning.

\*1. Federal Register, 50 (188), September 18, 1985, pp. 37958-37959, and September 27, 1985, pp. 39526-39527.

DEFINITIONS OF STATUS FOR THE OFFICIAL LIST  
OF  
TENNESSEE'S RARE PLANTS<sup>1</sup>

E - ENDANGERED, Species now in danger of becoming extinct in Tennessee because of:

- (a) their rarity throughout their range, or
- (b) their rarity in Tennessee as a result of sensitive habitat destruction or restricted area of distribution.

T - THREATENED, Species likely to become endangered in the immediately foreseeable future as a result of rapid habitat destruction or commercial exploitation.

S - SPECIAL CONCERN, Species requiring special concern because of:

- (a) their rarity or distinctive in Tennessee because the State represents the limit or near-limit of their geographic range, or
- (b) their status is undetermined because of insufficient information.

P - POSSIBLY EXTIRPATED, Species that have not been seen in Tennessee within the past 20 years.

\*1. Adapted from the Committee for Tennessee Rare Plants. 1978. The rare and vascular plants of Tennessee. J. Tenn. Acad. Sci. 53(4):128-133.

STATUS OF TENNESSEE'S RARE WILDLIFE

**STATUS DESIGNATIONS**

E-P - Endangered, Possibly extirpated

E - Endangered

T - Threatened

S - Special Concern

I - Inactive

D - Deemed in Need of Management

\* - Species Proposed for Federal Protection

THESE SPECIES ARE FOUND TO OCCUR IN HAMILTON COUNTY, TENNESSEE  
 TN DEPARTMENT OF CONSERVATION  
 Ecological Services Division  
 January 31, 1989

	SCIENTIFIC / COMMON NAME	STATUS: FEDERAL	STATE	ESD
1	GYRINOPHILUS PALLECUS TENNESSEE CAVE SALAMANDER	C2	T	T
2	IXOBRYCHUS EXILIS LEAST BITTERN		D	D
3	NYCTICORAX VICINACEUS YELLOW-CROWNED NIGHT-HERON			
4	CATHARTES AURA TURKEY VULTURE		D	D
5	HALIAEETUS LEUCOCHEPHALUS BALD EAGLE	LELT	E	E
6	BUTEO LINEATUS RED-SHOULDERED HAWK		D	D
7	FALCO PEREGRINUS PEREGRINE FALCON	LE	E	E
8	RALLUS ELEGANS KING RAIL			
9	RALLUS LIMICOLA VIRGINIA RAIL			
10	TYTO ALBA COMMON BARN-OWL		D	D
11	THRYOMANES BEWICKII BEWICK'S WREN		T	T
12	LIMNOTHLYPIS SWAINSONII SWAINSON'S WARBLER		D	D
13	AIMOPHILA AESTIVALIS BACHMAN'S SPARROW	C2	E	E
14	AMMOORAMUS SAVANNARUM GRASSHOPPER SPARROW		T	T

## Hamilton Co.

<u>SCIENTIFIC / COMMON NAME</u>	<u>STATUS:</u>		
	<u>FEDERAL</u>	<u>STATE</u>	<u>ESO</u>
PERCINA TANASI 15 SNAIL DARTER	LT	T	T
NEOTOMA FLORIDANA 16 EASTERN WOODRAT		D	D
TRACHEMYS SCRIPTA TROOSTII 17 CUMBERLAND SLIDER			
ANOLIS CAROLINENSIS 18 GREEN ANOLE		D	D
CNEMIDOPHORUS SEXLINEATUS 19 SIX-LINED RACERUNNER		D	D
CAMBARUS EXTRANEUS 20 CHICKAMAUGA CRAYFISH	C2		
DROMUS DROMAS 21 DROMEDARY PEARLYMUSSEL	LE	E	M
EPICHLASMA TORULOSA 22		E	M
LAMPSILIS ABRUPTA 23 PINK MUCKET	LE	E	M
PLETHOBASUS COOPERIANUS 24 ORANGE-FOOT PIMPLEBACK	LE	E	M
QUADRULA INTERMEDIA 25 CUMBERLAND MONKEYFACE	LE	E	M
LITHASIA GENICULATA 26 ORNATE ROCKSNAIL	C2		
LITHASIA VERRUCOSA 27 VARICOSE ROCKSNAIL	C2		
ACER LEUCODERME 28 CHALK MAPLE		S	S
POLYMNIA LAEVIGATA 29 TENNESSEE LEAFCUP	C2	S	S
SILPHIUM LACINIATUM 30 COMPASS PLANT		T	T
DIERVILLA RIVULARIS 31 MOUNTAIN BUSH-HONEYSUCKLE		T	T

## Hamilton Co.

SCIENTIFIC / COMMON NAME	STATUS:		
	FEDERAL	STATE	ESD
LONICERA FLAVA 32 YELLOW HONEYSUCKLE	S	S	
DIAMORPHA SMALLII 33 SMALL'S STONECROP			
SCUTELLARIA MONTANA 34 LARGE-FLOWERED SKULLCAP	LE	E	E
GELSEMIUM SEMPERVIRENS 35 YELLOW JESSAMINE	S	S	S
TALINUM TERETIFOLIUM 36 ROUNDLEAF FAMEFLOWER	T	T	T
LYSIMACHIA FRASERI 37 FRASER LOOSESTRIFE	E	E	E
DELPHINIUM EXALTATUM 38 TALL LARKSPUR	E	E	E
SAXIFRAGA CAREYANA 39 CAREY SAXIFRAGE	C2	S	S
VIOLA TRIPARTITA VAR TRIPARTITA 40	S	S	S
SAGITTARIA PLATYPHYLLA 41 OVATE-LEAVED ARROWHEAD	S	S	S
LILIMUM PHILADELPHICUM 42 WOOD LILY	E	E	E
TRILLIUM LANCFOLIUM 43 NARROW-LEAVED TRILLIUM	E	E	E
TRILLIUM RUGELII 44	E	E	E
TRITELEIA CROcea 45 YELLOW TRITELEIA			

Site No. TND 003328960  
Ref. No. 15

February 26, 1982

Name \_\_\_\_\_ Organization \_\_\_\_\_ Phone \_\_\_\_\_

William M. Porter Sou. Ry. Co. 266-1141

A. Gayle Jordan Sou. Ry. Co. (202) 383-4428

H.B. Wyche, Jr. Sou. Ry. 404/529-1493

J. B. Hilton Sou. Ry. 615-698-1318

J. E. Anderson Sou. Ry. 615-521-1407

R. T. Neumann Sou. Ry. 615-266-0188

Spells Doughty Team-American 266-3000

Frances Alexander " "

Bill Hobas " "

Dave Snyder " "

Reed Wilberson F.R.A. 404/551-3931

GEORGE E. KURTZ City of Chattanooga - System Engineering Dept 757-5026

chibby Wann Cha. Times

George Baker Cha. Times

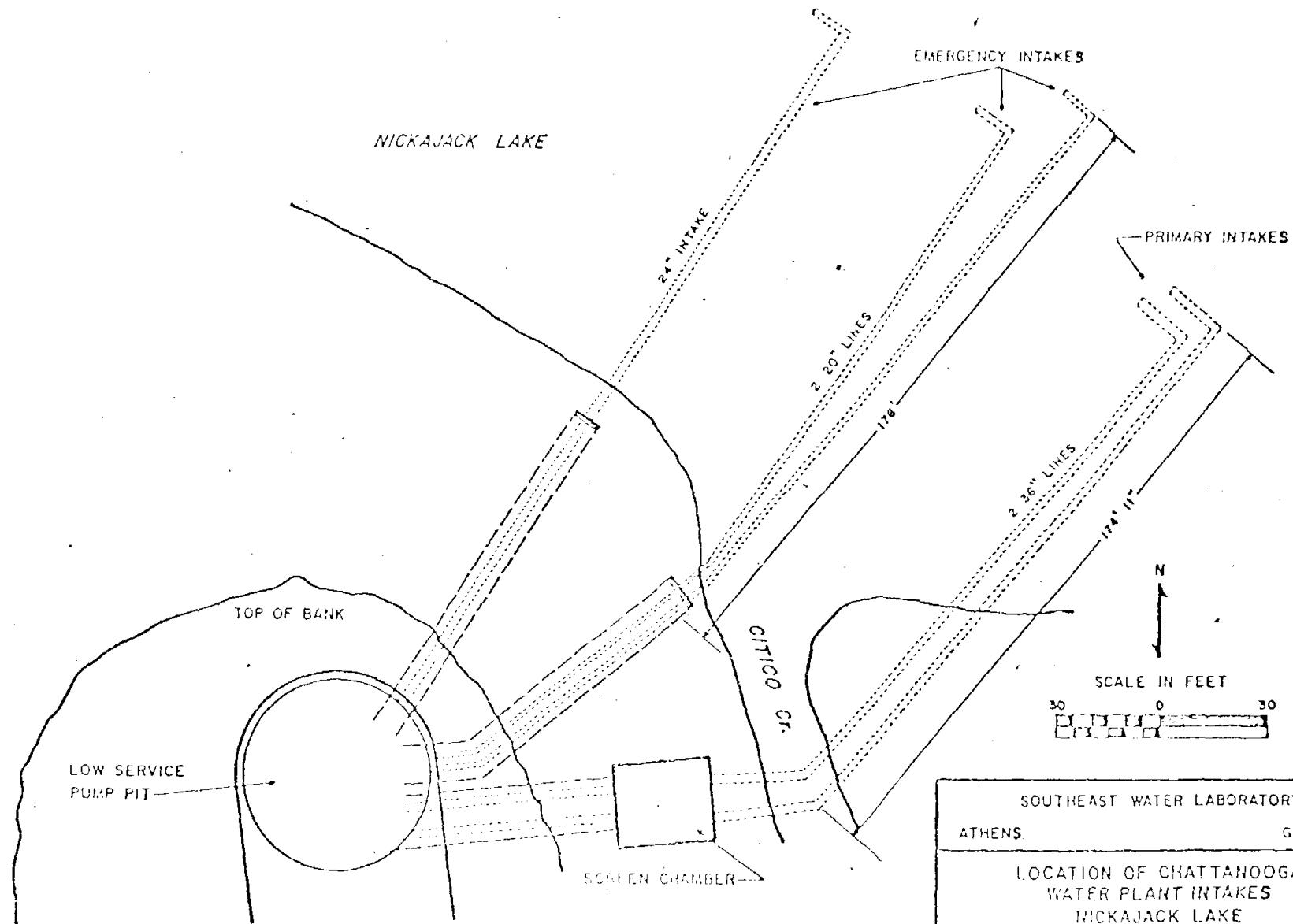
TERRY WHALEN DWQC

Joe Hartman Tr. Water Quality Control 615/624-99

Jack McCormick Tr. Water Quality Control 615/624-9921

Eugene Wright City of CHATT. I&S Supt. 615/757-5626

ATTACHMENT 4



SOUTHEAST WATER LABORATORY  
ATHENS, GEORGIA  
LOCATION OF CHATTANOOGA  
WATER PLANT INTAKES  
NICKAJACK LAKE  
U.S. DEPARTMENT OF THE INTERIOR  
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION  
SOUTHEAST REGION ATLANTA, GEORGIA

PRINTED  
U.S. GOVERNMENT PRINTING OFFICE  
1964 50-1000-100

Site No. TND 003328960  
Ref. No. 16

TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

~~conclusion~~  $\rightarrow$  13th 5

DATE: November 19, 1987

TO: Ferman Miller, Division of Superfund, Chattanooga

FROM: *CJS* Craig Stannard, Division of Ground Water Protection,

**SUBJECT:** Information Concerning Wells in the Chattanooga Area

As per your request, wells in the Chattanooga area, south of Tennessee River, east of Lookout Mtn., and west of Missionary listed and described below:

1. Uniform Rental Services Inc. has one or more wells at its plant on Tennessee Avenue. Specific details are not known.
  2. Velsicol Chemical Corporation has several monitoring wells at "Residue hill." *at ground surface*
  3. Southern Wood Piedmont Company at 400 East 33rd Street has at least sixteen monitoring wells of shallow depth.
  4. Chattanooga Glass Company has a well at its plant facility at 401 West 45th Street. According to company officials it was drilled by Bacon Well Drilling Company in 1982 and it is approximately 325 feet deep. The well water, which is used for industrial purposes only, is reportedly of good quality and quantity.
  5. Southern Cellulose Products Inc. has two wells located on 38th Street just east of Chattanooga Creek. According to company officials, the two wells were drilled in 1976 by Miller Drilling Company and are approximately 150 feet deep. Only one of the wells is currently in use. The other well is auxilliary. The water withdrawn is used for processing purposes only and the water quality and quantity are reportedly good.
  6. Tennessee Truck Parts Company at 400 East Main St. has a well that is reportedly used for industrial purposes only. It is 145 feet deep and was completed in 1979.
  7. Will-Wear Hosiery has a well located at or near its 2000 Stuart Street plant location. The well is reportedly 1,301 feet deep and is used for industrial processes only.
  8. Chattanooga State College at 4501 Amnicola Highway has a 512 foot deep well that is used to supply water to the campus water fountain.

FROM DATE

10

9. Wheland Foundry at 2800 South Broad Street has a 61 foot deep well that is used for monitoring purposes.
10. Ledco Inc. at 3535 St. Elmo Avenue has a 250 foot deep well that provides water for the company's heat pump.
11. Gateway Hosiery Mills at 1220 East Main Street reportedly has a well that is used to provide processing water for its operations. The well is of unknown depth but is reportedly contaminated with perchloroethylene, benzene and a number of other organic chemicals at the ppm level. The well was reportedly drilled by Miller Drilling Company.
12. Alco Chemical Corporation at 909 Miller Avenue has a 600 foot deep well that provides water for industrial uses at the plant.
13. A well located at 1400 Citico Avenue, belonging to Robert Nabors, is reportedly 343 feet deep and was drilled earlier this year. It is not being used at this time.
14. A well has recently been completed for a car wash that is being built near the intersection of Wilcox Blvd. and Chamberlain Avenue. Its depth is not known but it was reportedly drilled by Miller Drilling Company. *In progress at Nov 15*

The wells are listed 1-14 on the enclosed location map. Well log information concerning some of the wells is also enclosed.

CJS/tdm

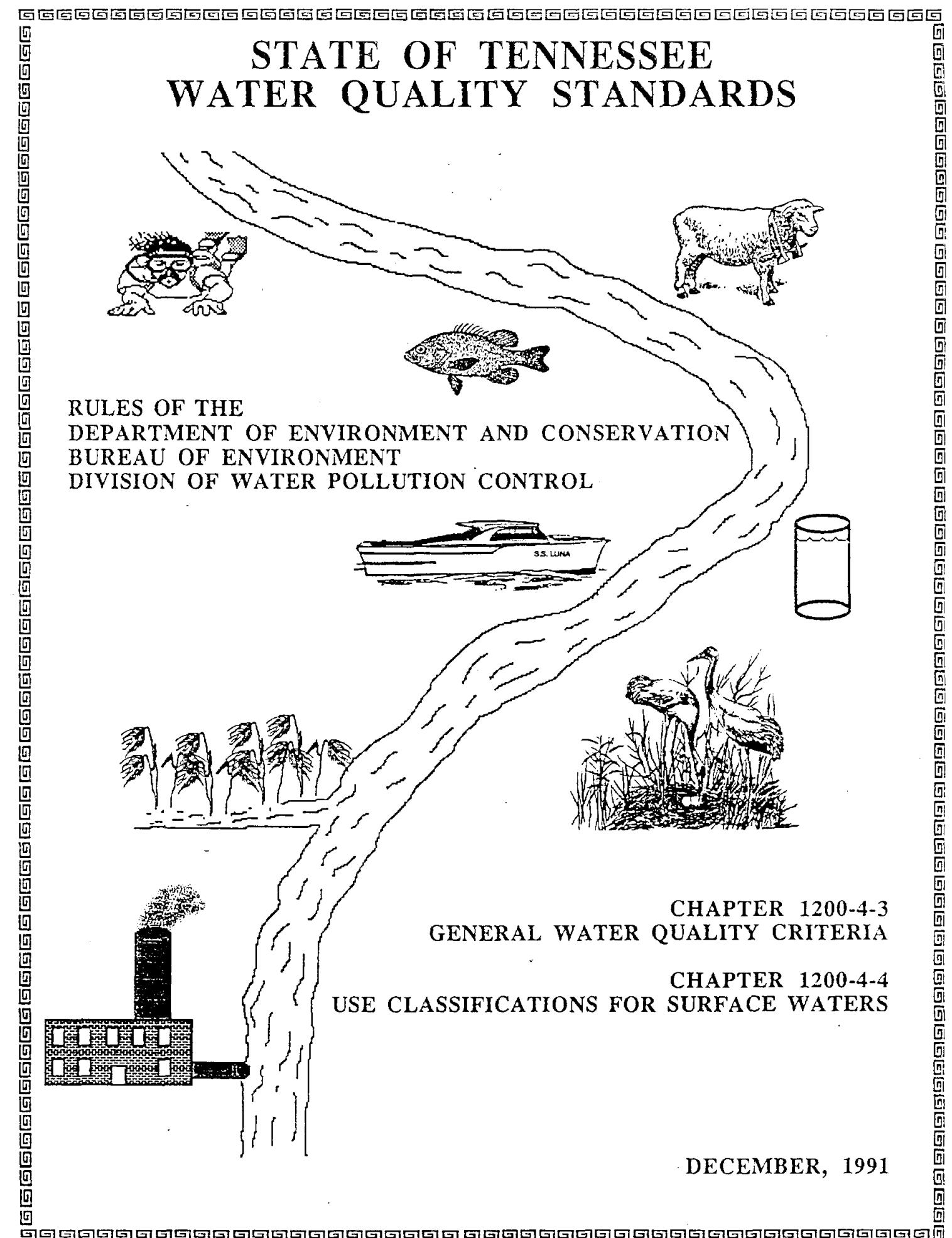
Enclosures

cc: Robert Powell, Division of Superfund, Nashville

Site No. TND 003328960  
Ref. No. 17

# STATE OF TENNESSEE WATER QUALITY STANDARDS

RULES OF THE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
BUREAU OF ENVIRONMENT  
DIVISION OF WATER POLLUTION CONTROL



CHAPTER 1200-4-3  
GENERAL WATER QUALITY CRITERIA

CHAPTER 1200-4-4  
USE CLASSIFICATIONS FOR SURFACE WATERS

DECEMBER, 1991

(Rule 1200—4—4—01, continued)

## (7) Lower Tennessee River Basin (Including Conasauga Basin)

STREAM	DESCRIPTION	DOM	IND	FISH	REC	IRR	LW&W	NAV
Tennessee River	Tenn-Ala State Line (Mile 416.5) to the POT Light (Mile 448.0)	X	X	X	X	X	X	X
Unnamed Tributary	At Tenn. River Mile 417.5; Mile 0.0 to Origin			X	X	X	X	
Battle Creek	Mile 0.0 to Origin	X	X	X	X	X	X	
Big Fiery Gizzard	Mile 0.0 to Origin			X	X	X	X	
Little Fiery Gizzard	Mile 0.0 to Origin			X	X	X	X	
Unnamed Tributary	At Little Fiery Gizzard Mile 0.6; Mile 0.0 to Origin			X	X	X	X	
Squatchie River	Mile 0.0 to 3.5	X	X	X	X	X	X	
Squatchie River	Mile 3.5 to 41.0	X	X	X	X	X	X	X
Little Sequatchie River	Mile 0.0 to Origin			X	X	X	X	
Clifty Creek	Mile 0.0 to Origin			X	X	X	X	
Sewanee Creek	Mile 0.0 to 4.0			X	X	X	X	
Sewanee Creek	Mile 4.0 to Origin	X		X	X	X	X	
Holywater Creek	Mile 0.0 to Origin	X		X	X	X	X	
Scott Creek	Mile 0.0 to Origin	X		X	X	X	X	
Sequatchie River	Mile 41.0 to 43.9			X	X	X	X	
Sequatchie River	Mile 43.9 to 74.0	X	X	X	X	X	X	
Sequatchie River	Mile 74.0 to 78.4			X	X	X	X	
Sequatchie River	Mile 78.4 to Origin	X	X	X	X	X	X	
Coops Creek	Mile 0.0 to 0.8			X	X	X	X	
Coops Creek	Mile 0.8 to Origin			X	X	X	X	
Tennessee River	Mile 448.0 to 460.6 (Chattanooga Creek)			X	X	X	X	X
Shoal Creek	Mile 0.0 to Origin			X	X	X	X	
Unnamed Tributary	At Tenn. River Mile 458.7; Mile 0.0 to Origin			X	X	X	X	
Lookout Creek	Mile 0.0 to Georgia-Tenn State Line			X	X	X	X	
Black Creek	Mile 0.0 to 1.6			X	X	X	X	
Black Creek	Mile 1.6 to Origin			X	X	X	X	
Chattanooga Creek	Mile 0.0 to Georgia-Tenn State Line			X	X	X	X	
Tennessee River	Mile 460.6 to 499.4 (Hiwassee)	X	X	X	X	X	X	X
Citico Creek	Mile 0.0 to Origin			X	X	X	X	
South Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line			X	X	X	X	
Friar Branch	Mile 0.0 to Origin			X	X	X	X	
West Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line			X	X	X	X	
Spring Creek	Mile 0.0 to Georgia-Tenn State Line			X	X	X	X	
Mackey Branch	Mile 0.0 to Origin			X	X	X	X	
Ryall Springs Branch	Mile 0.0 to Origin			X	X	X	X	
Unnamed Tributary	At Tenn. River Mile 469.2; Mile 0.0 to 1.5			X	X	X	X	
Unnamed Tributary	Mile 1.5 to Origin			X	X	X	X	
North Chickamauga Creek	Mile 0.0 to Origin			X	X	X	X	
Unnamed Tributary	At N. Chickamauga Creek Mile 0.7; Mile 0.0 to 0.3			X	X	X	X	
Unnamed Tributary	Mile 0.3 to Origin			X	X	X	X	
Unnamed Tributary	Mile 1.0 to Origin			X	X	X	X	
Wolf Creek	Mile 0.0 to Origin			X	X	X	X	
Sale Creek	Mile 0.0 to Origin			X	X	X	X	
Roaring Creek	Mile 0.0 to Origin			X	X	X	X	
Brush Creek	Mile 0.0 to 2.5			X	X	X	X	

Site No. TND 003328960  
Ref. No. 18

33-314

## TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## ENVIRONMENTAL LABORATORIES

Sample Source Lander Corp  
 I.D. None  
 Stream Mile \_\_\_\_\_ Depth \_\_\_\_\_  
 County Hamilton Field No. 1  
 Collected: Date 10/15/90 Time 12:45 By DMS  
 Contact Hazard Dust(Pb, Cd)  
 Signature of Sampler \_\_\_\_\_

## Inorganic Analysis, Solids

Sample type  
 Sediment  Tissue  Air  Other

Sample Priority  
 Emergency  Legal  Routine  Ambient

Requested priority date \_\_\_\_\_

Laboratory Number K010080  
 Received: Date 10/16/90 Time 0930 by Eam  
 Sampling Agency:  APC  SWM  DOT  
 FSF  SSF  FUST  SUST  EEP  
 WS  GW  WP  DRH   
 Other \_\_\_\_\_

Send Report to David Smith  
DSWM chatt.

code	✓	Sediment	Unit	value	code	✓	Tissue	Unit	value	code	✓	EP Toxicity	Unit	value
01108		aluminum, Al	mg/kg		81666		aluminum, Al	mg/kg		01000		arsenic, As	µg/L	
01003		arsenic, As	mg/kg		01004		arsenic, As	mg/kg		01005		barium, Ba	µg/L	2760
01008	X	barium, Ba	mg/kg	154	81658		barium, Ba	mg/kg		01025		cadmium, Cd	µg/L	262
01023		boron, B	mg/kg		81657		boron, B	mg/kg		01030		chromium, total Cr	µg/L	410
01028	X	cadmium, Cd	mg/kg	33.6	71940		cadmium, Cd	mg/kg		01049		lead, Pb	µg/L	126000
00917		calcium, Ca	mg/kg		71939		chromium, Cr	mg/kg		71890		mercury, Hg	µg/L	< 10.2
01029	X	chromium, Cr	mg/kg	189	81659		cobalt, Co	mg/Kg		01065		<td>µg/L</td> <td></td>	µg/L	
01038		cobalt, Co	mg/kg		71937		copper, Cu	mg/kg		01145		selenium, Se	µg/L	
01043		copper, Cu	mg/kg		81660		iron, Fe	mg/kg		01075		silver, Ag	µg/L	
01170		iron, Fe	mg/kg		71936		lead, Pb	mg/kg		00723		cyanide, CN	µg/L	
01052	X	lead, Pb	mg/kg	4590	81741		manganese, Mn	mg/kg				Other		
00924		magnesium, Mg	mg/kg		71930		mercury, Hg	mg/kg						
01053		manganese, Mn	mg/kg		01069		nickel, Ni	mg/kg						
71921	X	mercury, Hg	mg/kg	0.23	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg		81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg		71938		zinc, Zn	mg/kg						
01118		selenium, Se	mg/kg		34326		cyanide, CN	mg/kg						
01078		silver, Ag	mg/kg		34468		phenols	mg/kg						
00934		sodium, Na	mg/kg				Coal							
01093		zinc, Zn	mg/kg				ash	%						
00721		cyanide, CN	mg/kg				heat content	BTU						
		nitrogen, ammonia	mg/kg				Moisture	%						
00633		nitrogen, NO <sub>2</sub> & NO <sub>3</sub>	mg/kg				sulfur	%						
		nitrogen, total kjeldahl	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	83.7										
32731	X	phenols	mg/kg	1.51										
00668		phosphate, total	mg/kg											

Signature of Unit Supervisor: \_\_\_\_\_

Edward M. Gury

Date JAN 16 1991

Date

Signature of Unit Supervisor: \_\_\_\_\_

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified below.

Comments: \_\_\_\_\_

\* please designate desired analyses by placing a check mark before the appropriate parameter.  
 INTERIM REPORT  
 Date NOV 27 1990  
 PH-3011 LAB (rev. 8/89)

TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT  
ENVIRONMENTAL LABORATORIES Laboratory No. \_\_\_\_\_

Sample Source Landes Corp  
ID 1001

I.D. penel

Stream Mile Depth

County Hamilton Field No.

Collected: Date 10/15/1991 Time 1250 By Dr. M.

Contact Hazard Pest (Phaser)

Signature of Sampler D. A. Dammann

## Inorganic Analysis, Solids

Sediment  Tissue  Air  Other

Sample Priority  
 Emergency  Legal  Routine  Ambient

Requested priority date \_\_\_\_\_

33-374 JAN 6.6 (30)  
 ENVIRONMENT  
 Laboratory Number KO10081  
 Received: Date 10/16/90 Time 0930 by Eam  
 Sampling Agency:  APC  SWM  DOT  
 FSF  SSF  FUST  SUST  EEP  
 WS  GW  WP  DRH   
 Other

Send Report to David Smith  
Dswm chatt

\* please designate desired analyses by placing a checkmark before the appropriate parameter.

PH-3011 LAB (rev. 8/89)

Date NOV 27 1990

Signature of Unit Supervisor:

Signature of Unit Supervisor:

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified below. Comments: \_\_\_\_\_

## TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## ENVIRONMENTAL LABORATORIES

Sample Source Landes corp  
 I.D. none  
 Stream Mile \_\_\_\_\_ Depth \_\_\_\_\_  
 County Hamilton Field No. 3  
 Collected: Date 10/15/90 Time 1305 By PMS  
 Contact Hazard None

Signature of Sampler Mark S. S.

## Inorganic Analysis, Solids

Sample type  
 Sediment  Tissue  Air  Other

Sample Priority DEC 08 1990  
 Emergency  Legal  Routine  Ambient

Requested priority date \_\_\_\_\_

Laboratory Number 90-11-0247  
KO10082  
 Received: Date 10/16/90 Time 0930 by Eam  
 Sampling Agency:  APC  SWM  DOT  
 FSF  SSF  FUST  SUST  EEP  
 WS  GW  WP  DRH   
 Other \_\_\_\_\_

Send Report to David Smith  
OSWm chatt.

code	✓	Sediment	Unit	value	code	✓	Tissue	Unit	value	code	✓	EP Toxicity	Unit	value
01108		aluminum, Al	mg/kg		81666		aluminum, Al	mg/kg		01000		arsenic, As	µg/L	
01003	✓	arsenic, As	mg/kg	1.4	01004		arsenic, As	mg/kg		01005		barium, Ba	µg/L	
01008	✓	barium, Ba	mg/kg	.38	81658		barium, Ba	mg/kg		01025		cadmium, Cd	µg/L	
01023		boron, B	mg/kg		81657		boron, B	mg/kg		01030		chromium, total Cr	µg/L	<10
01028	✓	cadmium, Cd	mg/kg	<2	71940		cadmium, Cd	mg/kg		01049		lead, Pb	µg/L	<35
00917		calcium, Ca	mg/kg		71939		chromium, Cr	mg/kg		71890		mercury, Hg	µg/L	
01029	✓	chromium, Cr	mg/kg	12	81659		cobalt, Co	mg/Kg		01065		nickel, Ni	µg/L	
01038		cobalt, Co	mg/kg		71937		copper, Cu	mg/kg		01145		selenium, Se	µg/L	
01043		copper, Cu	mg/kg		81660		iron, Fe	mg/kg		01075		silver, Ag	µg/L	
01170		iron, Fe	mg/kg		71936		lead, Pb	mg/kg		00723		cyanide, CN	µg/L	
01052	✓	lead, Pb	mg/kg	26	81741		manganese, Mn	mg/kg				Other		
00924		magnesium, Mg	mg/kg		71930		mercury, Hg	mg/kg						
01053		manganese, Mn	mg/kg		01069		nickel, Ni	mg/kg						
71921	✓	mercury, Hg	mg/kg	0.15	01149		selenium, Se	mg/kg						
01068		nickel, Ni	mg/kg		81742		silver, Ag	mg/kg						
00938		potassium, K	mg/kg		71938		zinc, Zn	mg/kg						
01148		selenium, Se	mg/kg		34326		cyanide, CN	mg/kg						
01078		silver, Ag	mg/kg		34468		phenols	mg/kg						
00934		sodium, Na	mg/kg											
01093		zinc, Zn	mg/kg											
00721		cyanide, CN	mg/kg											
		nitrogen, ammonia	mg/kg											
00633		nitrogen, NO <sub>2</sub> & NO <sub>3</sub>	mg/kg											
		nitrogen, total kjeldahl	mg/kg											
		oil and grease	mg/g											
		hydrocarbons, total	mg/g											
		percent solids	%	94.0										
32731		phenols	mg/kg											
00668		phosphate, total	mg/kg											

\* please designate desired analyses by placing a check mark before the appropriate parameter.

Signature of Unit Supervisor: Laura R AdamsDate 12-27-90

Date

Signature of Unit Supervisor:

Signature of supervisor indicates that the work was performed in accordance with federally approved procedures where available and in compliance with current quality assurance criteria except as qualified below.

Comments: chain of custody attached to 90-11-0245

Site No. TND 003328960  
Ref. No. 19

TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

**OFFICE CORRESPONDENCE**

DATE: 25 November 1986

TO: SIU Files

FROM: G.S. Garutnes

**SUBJECT:** *Re: Telecommunications*

FROM	TO	DATE
SIU	Hamilton Co. F.I.	

#### Details of annexation:

Mr. Burrell is in charge of the cross-connection monitoring program for TAWC. He did not know of any households which were using well water for domestic purposes. There are numerous private wells in the Chattanooga urban area, according to Mr. Burrell, but they are used only for watering gardens, washing cars, etc. or are commercial or industrial process water wells. TAWC's cross-connection program actively discourages household use of well water by prohibiting interconnections between private and public water supply systems, Mr. Burrell said.

GSC/10

Site No. TND 003328960  
Ref. No. 20

CFO ag, file

TRIP REPORT

OWNER/FACILITY Chattanooga Coke and Chemical Co. SITE # 33547

TYPE FACILITY Producer under demolition

COUNTY Hamilton CITY Chattanooga DATE 29 Jan 80

PURPOSE OF VISIT To purge monitoring wells with the contractor Westinghouse

INDIVIDUALS CONTACTED Tom Pelham, Kevin Maher - Sou. Coke; WGOW Radio Deann Bright;

WDEF-TV Stephen Ruf; Dunn Henry, Andrew Collins

OTHER DSF PERSONNEL PRESENT None

WEATHER CONDITIONS 45-55°, windy, cloudy-cold

24 hour hard rain stopped at 12:30 p.m. 1/29.

SAMPLES COLLECTED YES  NO

PHOTOS TAKEN YES  NO

COMMENTS AND DISCUSSION: FDM arrived on-site at 1:00 p.m. The 2 Westinghouse men were setting up to purge the control well nest; they arrived at 11:45 and were at lunch 12 - 1 p.m.

FDM met Stephen Ruf, a reporter for WDEF-TV, at 1:30 pm at the gate. Mr. Crane, a PRP, had stated not to let the media on-site. That request was complied with, but Mr. Ruf was very unhappy. Mr. Ruf interviewed FDM for 50 minutes, standing up and outside. Mr. Ruf had seen the public meeting notices for Natl Micro, D. M. Steward, and Mor-Flo and asked about those sites also. FDM described the Chattanooga Coke background and current status, accenting the well sampling. Hypothetical and long-term cases for Chattanooga Coke were not commented on because of no current, legally defensible lab data. Mr. Ruf asked about Chattanooga Creek, the Amnicola Dump, other well drilling and sampling in Chattanooga, and the Superfund process. That same evening FDM was on the Channel 12-local news. The story had been primed the night before during the Super Bowl half time.

A. D. Miller

INSPECTOR'S SIGNATURE

2/2/90

DATE

90-01

TRIP REPORT

The well purging train used by Westinghouse was assembled with a nitrogen cylinder, regulator, control box, 3/8 inch polyethylene tubing, a stainless pump at the well bottom, more polyethylene tubing, and a 3 gallon bucket to measure the volume. Westinghouse also recorded pH, conductivity, and temperature for the purged water. The deep well at #1 well nest was purged 60 gallons or 3 well volumes (.16 gal/foot).

Mr. Mahar, a consultant from Buffalo, NY, is retired from the Coke and Steel industry. He is to split samples throughout the next two days. He commented on the polyethylene tubing contributing phthalates to the tests; he asked for a copy of Mr. Miller's well drilling logs. He asked for two weeks lead time on sample splitting in the future.

Westinghouse said the #1 Shallow well was the only one of the 8 not developed, and therefore very muddy, while purging. The #1 deep well took 3 hours to purge.

FDM met Deann Bright, a reporter for WGOW-radio, at 3:45 at the gate. Ms. Bright interviewed FDM for 20 minutes, standing-up and outside. Again hypothetic and long-term cases for Chattanooga Coke were not commented on because of no current, legally defensible lab data. FDM called WSE after Ms. Bright left, to report the 2 media contacts were complete.

The #1 shallow well purging was begun while the deep well was being purged. Westinghouse moved the purging operation at 4:45 to the #2 nest. Mr. Mahar said photograph approval was required and if photos were really necessary. FDM had one shot of the purging at the #1 nest, and decided to talk to WSE the next morning. Apparently Mr. Mahar is concerned about the photos showing the shutdown, partially demolished plant in a bad light.

Mr. Mahar said he thought the hazardous waste stored near the #2 nest was recycled to make coke and not shipped as waste.

Mr. Mahar asked Miller and Henry how during drilling we knew there were no underground tanks or pipelines. Miller said the DSF had a site plan showing some lines and Henry said the rig crew can tell when metal is struck by the sound of the auger rotating. (Miller showed Mahar the big Site Plan the next day).

Mahar and Miller exchanged business cards.

Westinghouse said they would complete purging the shallow #2 well today but not the deep. FDM left the site at 5:10.

TRIP REPORT

OWNER/FACILITY Chattanooga Coke & Chemical SITE # 33547

TYPE FACILITY Producer under demolition

COUNTY Hamilton CITY Chattanooga DATE 30 Jan 90

PURPOSE OF VISIT To sample well nests #1 and #2 for groundwater.

INDIVIDUALS CONTACTED Kevin Mahar - Sou Coke; Westinghouse: D. Henry, A. Collins.

OTHER DSF PERSONNEL PRESENT G. S. Caruthers, C. J. Stannard

WEATHER CONDITIONS 30 - 50°, mostly cloudy

SAMPLES COLLECTED YES  NO   
PHOTOS TAKEN YES  NO

COMMENTS AND DISCUSSION: FDM and CJS arrived on site at 8:55 a.m. Westinghouse was purging at the #2 well nest. At 9:00 a.m., all involved parties were there, namely Mr. Maher and Gordon Caruthers.

Well sampling was a 3 man job. One man raised and lowered the bailer. We used the long stainless steel bailers from Westinghouse, and the UST polyurethane twine.

All 3 men wore the latex surgeons gloves. Whoever bottled the samples from the bailer also collected Mr. Maher's VOA samples, because of problems keeping air bubbles out of the vial and the septum falling out of the cap ring.

The third man reeled and let out the twine for bailing. This man also took the photographs. F. D. Miller did all the documentation. FDM was assisted by GSC and CJS in tagging, sealing, and bagging the DSF samples into the coolers. Mr. Maher transported his samples each day to technical abs on Cherokee Blvd. Mr. Maher initially had problems figuring which preservative and bottle was used for each parameter. The DSF sample and Mr. Maher collected samples alternatively from the

J. D. Miller

INSPECTOR'S SIGNATURE

2/2/90

DATE

TRIP REPORT

bailer. First, we did the VOA (Mr. Mahar did not think that was right); then BNA Extractables, which includes phenols, pesticides, and PCB; next cyanide (Mr. Mahar had a problem with getting a good test because of sulfide interference, even with the caustic soda-50% NaOH preservative); next total metals; lastly for DSF was mercury; Mr. Mahar also had a phenols jar.

Other health and safety considerations are DSF should have Tyvek suits and face shields to prevent potentially hazardous compounds in the water from being flunged by the twine. Rubber boots or overshoes are strongly recommended for this site. The waste/mud is difficult to wash off.

The #1 deep well (120') took one hour to collect. Miller was the sampler. Throughout the two samples, FDM added 5 ml 50% caustic to make the cyanide sample alkaline and serve as the preservative. The sample and caustic were mixed in the bottle. Mr. Mahar already had caustic in his cyanide bottles.

We then sampled the #1 shallow well (23'). There was a sewage odor here, possibly leakage from sanitary sewer down Central Avenue. All shallow well samples were muddy with fine silt or clay. This shallow well took 30 minutes to collect the split samples. We then broke for lunch.

When we returned, we did not have a deconed bailer and Westinghouse was not on-site. A decision was made to go to Walter Wood for a brush. Mr. Mahar, accompanied by FDM, bought a steel wire brush to clean tubes with a long handle. When we returned to the site, Westinghouse was back and we got a clean bailer from them. The wire brush is no good for cleaning the inside of a stainless bailer because it scratches the surface.

We next sampled the #2 deep well (105'). That took 45 minutes. We followed up with the #2 shallow well (25'), which took 15 minutes.

It was 4 p.m. then and we decided to stop for the day, as planned. Half of the wells were sampled. Some work remained in getting the 2 coolers ready for shipment.

FDM

CFO cg, File

TRIP REPORT

OWNER/FACILITY Chattanooga Coke and Chemical SITE # 33547

TYPE FACILITY Producer under demolition

COUNTY Hamilton CITY Chattanooga DATE 31 Jan 90

PURPOSE OF VISIT To sample well nests #3 and #4 for groundwater,

INDIVIDUALS CONTACTED Kevin Mahar-Sou. Coke; Westinghouse:, D. Henry, A. Collins

OTHER DSF PERSONNEL PRESENT G. S. Caruthers, C. J. Stannard

WEATHER CONDITIONS 30-50°, mostly sunny

SAMPLES COLLECTED YES X NO  
PHOTOS TAKEN YES X NO

COMMENTS AND DISCUSSION: FDM and CJS drove to Greyhound first to ship the two coolers from the Jan. 30 work. We arrived on-site at 8:50. We must finish today because of a 6 PM flight for Mr. Mahar.

CFO arrived on-site at 8:50. Dunn Henry went to Atlanta yesterday to get a short, small diameter, teflon bailer. A stainless bailer was lost down the #3 shallow well. Westinghouse was purging #3-S well this morning. Westinghouse will finish their work this afternoon and return to Atlanta. The State contractor is making pump tests and measuring water levels.

The CFO waited for Gordon to arrive at 9:20. Mr. Maher thought we should be getting composite samples.

The first well this date to sample was the #4 Deep (108'). Gordon is the bailer, Ferman the sampler, and Craig the reeler. This activity took 35 minutes. We then moved to the #4-Shallow well (17'). A kerosene-odor was smelled in the water bottles. GSC asked about the yellow drums and the trench on the Morningside Chemical

A.D. Miller  
INSPECTOR'S SIGNATURE

2/2/90  
DATE

TRIP REPORT

site, which was visible from the #4 nest. The shallow well took 15 minutes to sample, not counting the paperwork.

We decided not to stop for lunch and moved to the #3 Deep well (112'). This sample collection took 40 minutes. We finished at #3-S(17'), which was purged this same morning. Here we used the special teflon bailer. The sample collection took 25 minutes because this bailer had a much smaller capacity. Craig thought the water had a naphthalene-odor as at Morningside Chemical.

At approximately 1:00 p.m., Wayne Everett arrived on-site and discussed several items, site-related, with Kevin Mahar. FDM asked Mr. Mahar to write a letter requesting any discussed documents. A receipt for samples was signed by Mr. Mahar. We left the site at 1:30 for lunch.

One cooler was shipped that afternoon. The second cooler, by mistake, was delayed until the following morning.

Attachment - Receipt for Samples

Site No. TND 003328960  
Ref. No. 21

for studies

TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

DATE: June 17, 1991

TO: Landes Company File (to be established)

FROM: Wayne S. Everett

**SUBJECT:** Activate States Contractor on immediate action to overpack hazardous materials accessible to the public.

On Thursday June 13, 1991, Mr. Guy Moose, Solid Waste Division in Chattanooga, informed Wayne Everett that trustees for the Landes property have failed to respond to requests through his efforts and OGC-E, Mr. Joe Sanders, to remove or handle identified hazardous substances in an approved manner which are accessible to the general public.

Communication with Attorney Wright Tisdale, trustee handling FMC interest for Landes Company, in Knoxville, Tennessee failed to get a favorable response from Friday June 7th through Thursday June 13th 1991.

On Thursday June 13, 1991 at approximately 3:00 PM EST, Wayne Everett telephoned Nashville Superfund Central Office and requested that the State's Contractor, Ferguson Harbor Service Inc., be authorized to overpack the existing hazardous materials through an immediate action. Mr. David Randolph contacted the State's Contractor relative to the authorized response. Mr. Bill Helton telephoned Wayne Everett at approximately 3:30 PM EST and stated Ferguson Harber Service, Inc. would have Messrs. Charles Crick and Kevin Wagner respond on Friday morning June 14, 1991.

On June 14, 1991, at approximately 11:30 EST Messrs. Crick and Wagner arrived in Chattanooga. Wayne Everett and Elizabeth Jayne met the men and went to the site at 314 Hooker Road, Chattanooga, Tennessee. Channel 12 news crew arrived within fifteen minutes of the state's personnel.

Messrs. Crick and Wagner donned their work clothing and proceeded to evaluate their assignment. The Ammonium Hydroxide plastic 10 gallon drum had been removed and was no longer available. However, oil, sludge, paint and other substances were still onsite. At Wayne Everett's direction the states' contractor packed four (4) 85 gallon drums with the following contents:

Drum #1

5 gal Hydraulic oil H 32  
5 gal Hydraulic oil H H 6  
5 gal Oil looks like 30 w

Drum #2

1 gal Lowes latex paint  
1 gal green enamel paint  
1 gal brown enamel paint  
1 gal prep mix for taping & texturing  
1 gal Prairie Industrial Adhesive  
1 gal Permafuse Bonding Adhesive  
5 gal Latex Paint Enterprise Co.

2 qts  
1 qt  
2 qts  
2 ats  
1 qt  
full  
empty

Landes Company  
June 17, 1991  
Page 2

5 gas Sunnyside High gloss floor finish	full
5 gal Devee white flat latex	full
5 gal Petroleum Naptha UW1255	empty

Drum #3

2 - 5 gal Black Jack Roof Cement  
5 gal unknown white paint

Drum #4 Sludge Sample #CHTN-SS01-SS01

Sludge

Dirt

Debris 1) Screew  
2) Canvas  
3) Poly  
4) Wood

After overpacking, the four drums and a plastic wrapped package of burlap like material was secured in a small shed on the Landes property.

The following pictures were taken.

Slide 14 and 15. Sludge area at southwest side of the trash pile at the base of a pile of wooden pallets. Time 12:35 PM EST. Elizabeth Jayne was present for Solid Waste Management and she also took a series of slide pictures of the total proceeding.

Slide 16. Northwest side of trash pile. High gloss metal Interlock Floor Finish. Time 12:45 PM

Slide 17. Northeast side of trash pile. Oil in five (5) gallon container.

Slide 18. Consolidation of cans at westside and north end of trash pile. Time 12:50 PM

Slide 19. Three over-pack drums with containers. Time 1:20 PM.

Slides 20 and 21 - Storage Shed and placing of overpacks in secure building.

Weather conditions was sunny and hot, temperature was in the upper 80's. The over pack was performed under Ferguson Harber Service Job 5465-5. One sample was taken of the sludge.

WSE/ph

Site No. TND 003328960  
Ref. No. 22

## TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

FROM	TO	DATE

DATE: June 18, 1991

TO: Landes Company File (to be established), 314 Hooker Road,  
Chattanooga, Tennessee 37410  
 FROM: Wayne S. Everett  
 SUBJECT: Log of Events and Immediate Action to Secure Sludges, Oil,  
and Paint Containers at Landes Company.

On Friday, June 7, 1991, Mr. Guy Moose, Division of Solid Waste Management in Chattanooga Field Office, requested Wayne S. Everett to join him in evaluation of a general trash site on the Landes Company property. Mr. Moose informed Wayne Everett that he had a complaint relative to the property and had been involved with trying to evaluate the property concerning hazardous waste. Mr. Moose informed Wayne Everett that the Company has gone bankrupt.

Upon arriving at the Landes Company, Wayne Everett made the following observations at a dump site on the southern part of the Landes property. A railroad track bisects the Landes property and the trash which consisted of empty 55 gallon drums, paper, paint cans, wooden pallets and general trash that had been cleaned out of Warehouses were deposited on the south part of the property which is owned by Landes Company.

Wayne Everett observed a 10 gallon plastic container that had Ammonium Hydroxide marked on the label. Mr. David Smith, with the the Division of Solid Waste Management, used a pH meter and read 13.6 pH on the meter. The Ammonium Hydroxide container appeared to be approximately half full of the corrosive substance. This determination was made at 3:35 PM relative to the pH and observation of the contents. Just from opening the drum a very pungent odor was detected.

A 5 gallon plastic container of extra heavy duty degreaser concentrate was also noted. Labelling on the 5 gallon container said B C-10 Highly Concentrated Butal Cleaner.

TO  
 A second 5 gallon plastic container was marked High Gloss Metal Floor Finish from the Spartan Company 110 North Westwood Avenue, Toledo, Ohio 43607.

Observation revealed an area approximately 4 foot square with sludges 3 inches deep of what appeared to be a separator sludge. A burlap line cover was under and on the sides of the sludge which had a blue-like appearance.

Approximately 100 feet northeast of the trash pile one could observe what appeared to be baghouse dust and foundry sand or a schredder fluff approximately 15 foot wide and 25 foot long and with a depth of 1½ to 2 feet deep.

Wayne Everett, Mr. Moose and Mr. David Smith stepped across the railroad track and entered the facilities of the Landes Company. Most of the warehouses were clear and clean of any debri. A warehouse on the western side of the property contained 18 paint cans and a five gallon container of what stated on the label was

Office Memorandum  
Landes Company  
June 18, 1991  
Page 2

Industrial Pan Handler from the Van Straaten Chemical Company. The container is a 5 gallon plastic container that has approximately 4 gallons of the substance remaining in the container.

Mr. Moose explained to Wayne Everett that the substances at the site were reported by the citizenry in the Alton Park area. Mr. Everett was also informed that Channel 12 News Media had already been onsite and found the substances in the trash pile. Mr. Moose requested information as to whether Superfund could be of assistance, and Wayne Everett explained that we could overpack the hazardous substances but we could not move the overpacks offsite at the present time.

On Monday June 10, 1991, Mr. Joe Sanders in Office of General Counseling for the environment was contacted by Mr. Moose and Wayne Everett relative to the substances on site at the Landes Company. Mr. Moose explained that the containers needed to be overpacked and Wayne Everett explained that Superfund could do that job with approval from Central Office. Joe suggested that the owners of the property be contacted again and give them a specified time to remove the containers and secure them out of public contact. We jointly agreed to allow 48 hours for the company to respond and secure all substances where public could not have contact with the Ammonium Hydroxide and/or paint, oil, grease, etc.

From Monday afternoon until Wednesday June 12, 1991, Mr. Moose worked with Mr. Tisdale, attorney for the Landes Company property, relative to securing the Ammonium Hydroxide and other substances of concern. On Thursday June 13, 1991 Wayne Everett was informed that no response has been received from Mr. Tisdale or other members of the Company.

On June 13, 1991, Wayne Everett contacted Mr. David Randolph and requested that the State's contractors be allowed to come in and overpack the substances of concern at the Landes Company.

WSE/ph

Site No. TND 003328960  
Ref. No. 23

Page 1 of 2

CERCLIS

NEW SITE DISCOVERY INFORMATION

SITE NAME: LANDES COMPANY

COUNTY: HAMILTON

SITE ADDRESS: 314 HOOKER ROAD  
CHATTANOOGA, TENNESSEE

ZIP 37410

LATITUDE: 35/18/30

SIZE OF SITE: 13 acres

LONGITUDE: 34/59/43

QUADRANGLE: GA/TN Ft. Oglethorpe,  
106-NE, USGS 7.5' Series, 1982

(Attach a copy of the topo with site marked)

GENERAL DESCRIPTION OF SITE: The site is located at the intersection of Hooker Road and Wilson Road, in the Chattanooga Creek area. It consists of many large buildings on approximately 13 acres, with a railroad spur which cuts through the property. It is located in an industrial area, with residential areas being less than 1/4 mile away.

SITE STATUS: ACTIVE XX INACTIVE

RERA FACILITY: XX YES NO (Hazardous waste generator)

YEARS OF OPERATION: Pre-1947 TO 1989

WASTE BELIEVED PRESENT AND QUANTITIES:

Hydraulic oil, petroleum oil, paint waste, industrial and bonding adhesive, petroleum naptha, ammonium hydroxide (pH 12.4 - 13.6), B C-10 concentrated butyl cleaner, lead, and piles of searator sludges, baghouse dust, foundry sand and shredder fluff. Quantities unknown.

BRIEF DESCRIPTION OF POTENTIAL HAZARD: Contact hazard from surface contamination, possible surface water contamination, possible groundwater contamination.

CERCLIS

NEW SITE DISCOVERY INFORMATION

SITE OWNER: FMC Acquisition Corporation

ADDRESS: P. O. Box 158  
Knoxville, Tennessee ZIP 37901

PHONE: 800-621-4500

ALSO CONTACT: Wright Tisdale, Jr. (atty. for FMC)  
Suite 547  
Box 59039  
Knoxville, Tennessee 37950  
(615) 524-2763

SITE OPERATOR: (previous) Russell W. Landes - (Landes Corp.)

ADDRESS: 1623 Starboard Drive  
Hixson, Tennessee ZIP 37343

PHONE: (615) 877-4819

OTHER RESPONSIBLE PARTIES:

NAME: David C. Horsman (Pres.- Concrete Forms Corp.)

ADDRESS: 1505 Lyndhurst Drive  
Chattanooga, Tennessee ZIP 37405

PHONE: (615) 756-1924

NAME: Hal C. Shook (Pres.- CFC Fabrication Corp.)

ADDRESS: Unknown

PHONE: Unknown

DSF CONTACT: Jett Holloway PHONE: (615) 624-9921

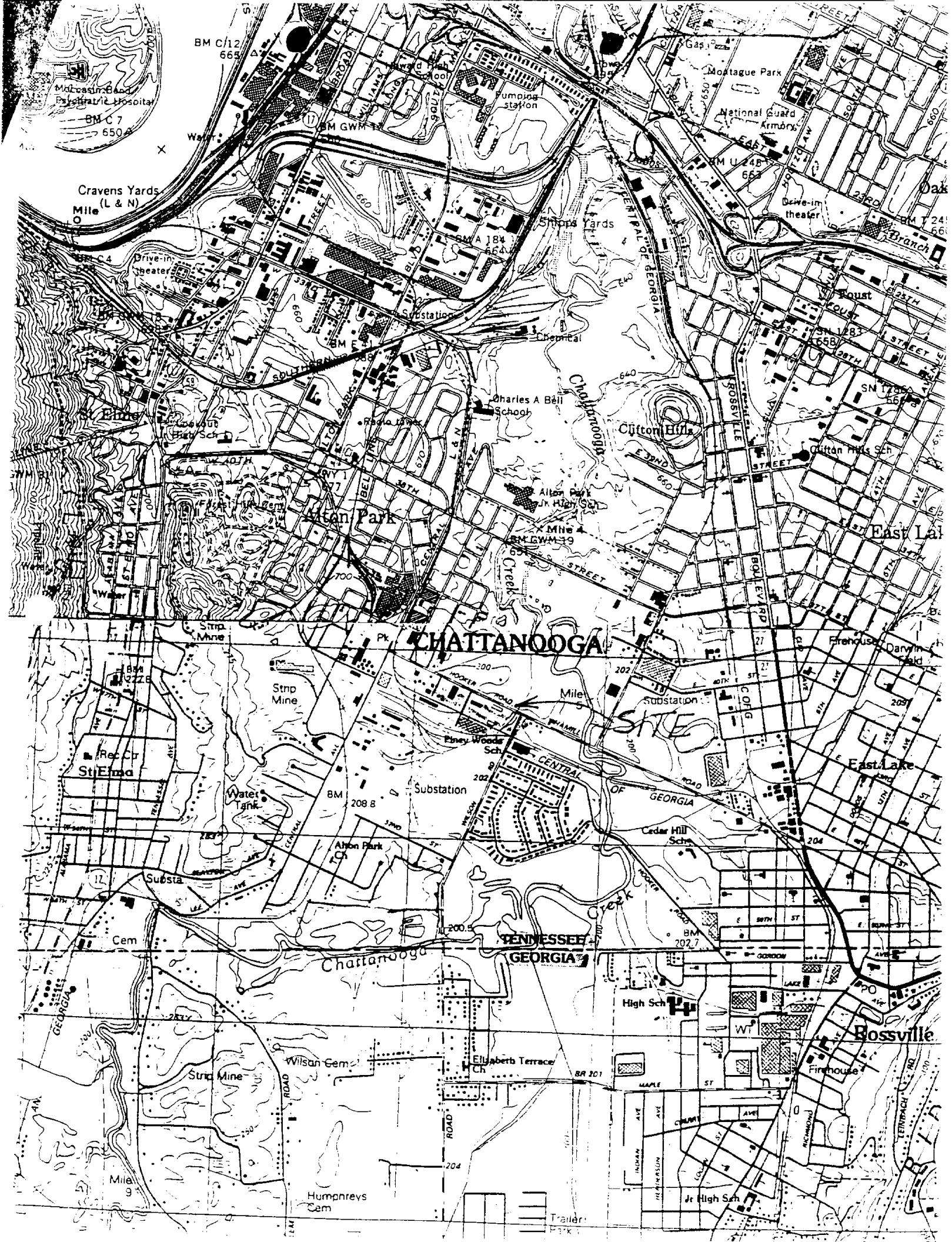
SITE CONTACT: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE: \_\_\_\_\_

COMMENTS: The site has been operated as several different businesses over the years, with most businesses specializing in metal fabrication and concrete forms. The facility was cited with a Notice of Violation from DSWM under Rules 1200-1-11-.07(1)(b)1, Code (3510), Class A, and Rule 1200-1-11-.07.03(1)(b), Code (0010), Class C, in January 1991, for improper disposal of a hazardous waste (D008). In June of 1991, DSF was called in for Emergency Overpack of hazardous waste containers into drums. A copy of the topo map is attached.



Site No. TND 003328960  
Ref. No. 24

TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

DATE: April 24, 1992

TO: Southern Railway - Citico Yards Site, File #33634

FROM: Craig Stannard, Geologist, CFO

SUBJECT: Demographic and Surface Water Quality Data

On 4-21-92, CJS checked with Phil Stewart (Manager, TDWPC in Chattanooga) regarding the existence of wetlands in the vicinity of the Southern Railway - Citico Yards site. Phil said that several areas bordering the Tennessee River, within a mile of the site, qualify as wetlands according to the Federal definition. However, he said none of these areas are as yet officially classified as such.

On 4-23-92, CJS telephoned Drew Thornton (TVA Data Services in Knoxville, phone: 632-2817) concerning flow data for the Tennessee River in Chattanooga. He said the average flow, taken over a period of 116 years, is 36,650 cfs. CJS then telephoned the USGS in Nashville (736-5424) and spoke with Charles Gamble concerning Citico Creek. Mr. Gamble said flow recordings they have for Citico Creek range from a low of 0.53 cfs (1973 data) to a high of 12.16 cfs (1973).

On 4-23-92, CJS telephoned the Chattanooga-Hamilton County Regional Planning Commission and spoke with Deborah Maddox (757-5216). According to Ms. Maddox, the most recent population figures for Chattanooga and Red Bank are 152,466 and 12,322 respectively.

CJS/31042114

Site No. TND 003328960  
Ref. No. 25

MEMORANDUM

TO: North Hawthorne Ave. Dump File #33550  
FROM: Craig Stannard(CJS), TDSF, CFO  
SUBJECT: Stream Flow and Site Data  
CC: Nashville TDSF  
DATE: July 27, 1992

On 7-8-92, CJS telephoned City of Chattanooga engineer, Drexyl Heidel (757-5026), and requested permission to visit the North Hawthorne St. Dump to observe and photograph the wood chipper/burner construction site. Drexyl said anytime would be OK, provided it was between the hours of 8 AM and 3:30 PM during the work week when the gate on the entrance road to the site was unlocked.

CJS asked about ownership of the site. Drexyl said the City of Chattanooga now owns the site. The city bought the site in 1991 from a Mr. Gary Gibson after a failure to pay back taxes on the site. Mr. Gibson had apparently bought the site earlier in 1991 from the former owner of the site, Robert P. Scott.

Drexel said that the groundwork for the proposed wood chipper/burner operation was nearly completed. The necessary 3 to 4 acres had been cleared of vegetation and approximately 25,000 cubic yards of clay (from various municipal construction sites around town) had been spread over the cleared area.

On 7-13-92, CJS telephoned Drew Thornton of TVA (632-2859) to request flow and fishery data for South Chickamauga Creek. He said the longterm average flow for the creek, as measured from 1929 to 1991, was 698 cfs. He, regrettably, had no fishery information on the creek. CJS also requested information on Chestee Creek in McMinn County. Drew said that in the vicinity of Etowah, the average flow is 181 cfs.

On 7-21-92, CJS spoke with Nancy Thomas and Wayne Everett (TDSF staff) concerning enforcement dates etc. for the Hawthorne Avenue Dump. CJS was informed that the site was promulgated on May 23, 1985, the site discovery was completed on November 1, 1979, the Preliminary Assessment was completed on December 12, 1984, and the Site Investigation was completed on July 1, 1979. Wayne mentioned that there are approximately 9,500 students at both the Chattanooga State Area Vocational Technical School and Chattanooga State Technical Community College.

Attached is the Tennessee Wildlife Resources Agency printout on fish production for the Tennessee River (Nickajack Lake).

1991  
**TWRA**  
**STATEWIDE**  
**SUMMARY OF CREEEL CLERK EFFORT**

RESERVOIR	ESTIMATED HOURS	ESTIMATED HOURS PER ACRE	ESTIMATED TRIPS	ESTIMATED TRIPS PER ACRE
BOONE	206,463	46.71	56,304	12.81
CENTER HILL	452,750	24.85	192,447	10.56
CHEROKEE	668,916	22.08	196,184	6.14
CHICKAMAUGA	1,545,738	43.66	539,578	15.24
DALE HOLLOW	558,219	23.86	207,484	8.87
DOUGLAS	845,219	27.81	308,549	10.15
GUNTERSVILLE	140,624	28.12	58,430	11.69
KENTUCKY	1,572,259	14.27	486,887	4.42
NICKAJACK	264,064	25.46	89,516	8.63
NORMANDY	157,394	48.73	55,502	17.18
NORRIS	456,563	13.35	152,425	4.46
OLD HICKORY	185,127	8.23	71,916	3.21
PERCY PRIEST	179,039	12.61	65,013	4.58
REELFOOT	202,790	20.28	57,744	5.77
SOUTH HOLSTON	360,424	57.64	102,759	16.91
WATTS BAR	856,299	21.96	321,137	8.23
WOODS	173,587	44.41	65,833	16.84

NOTE: OLD HICKORY AND PERCY PRIEST RESERVOIRS  
WERE NOT CREELED FOR THE ENTIRE YEAR

## ANNUAL SUMMARY OF CREEEL DATA FOR ALL ANGLERS BY RESERVOIR-1991

134

RESERVOIR=NICKAJACK

COMMON NAME	ESTIMATED NUMBER CAUGHT	ESTIMATED NUMBER HARVESTED	NUMBER CAUGHT PER HOUR	NUMBER HARVESTED PER HOUR	MEAN WEIGHT	PERCENT HARVESTED	NUMBER CREELED
GOLDEN SHINER	280.74	280.74	0.00	0.00	0.28	100.00	6
FLATHEAD CATFISH	374.33	374.33	0.00	0.00	2.25	100.00	8
BLUE CATFISH	8609.49	8094.79	0.03	0.03	3.27	94.02	184
CHANNEL CATFISH	23301.77	21944.84	0.09	0.08	2.00	94.18	498
BULLHEAD	421.12	421.12	0.00	0.00	2.34	100.00	9
FRESHWATER DRUM	3649.68	1263.35	0.01	0.00	8.53	34.62	78
WHITE BASS	3509.30	2994.61	0.01	0.01	0.78	85.33	75
YELLOW BASS	5942.42	4257.95	0.02	0.02	0.36	71.65	127
YELLOW PERCH	3930.42	3415.72	0.01	0.01	0.37	86.90	84
LARGEMOUTH BASS	59985.69	6691.07	0.23	0.03	2.26	11.15	1282
SMALLMOUTH BASS	1216.56	140.37	0.00	0.00	2.50	11.54	26
SPOTTED BASS	1122.98	655.07	0.00	0.00	1.07	58.33	24
WHITE CRAPPIE	2901.02	2433.12	0.01	0.01	0.61	83.87	62
BLACK CRAPPIE	4959.82	4538.70	0.02	0.02	0.66	91.51	106
UNIDENTIFIED SUNFISH	1450.51	1310.14	0.01	0.00	0.39	90.32	31

ANNUAL SUMMARY OF CREEEL DATA FOR ALL ANGLERS BY RESERVOIR-1991

RESERVOIR=NICKAJACK

COMMON NAME	ESTIMATED NUMBER CAUGHT	ESTIMATED NUMBER HARVESTED	NUMBER CAUGHT	NUMBER HARVESTED PER HOUR	MEAN WEIGHT	PERCENT HARVESTED	NUMBER CREELED
	BLUEGILL	67986.90	60640.76	0.26	0.23	0.34	89.19
REDEAR SUNFISH	5708.47	5380.93	0.02	0.02	0.38	94.26	122
WARMOUTH	93.58	93.58	0.00	0.00	0.35	100.00	2

Site No. TND 003328960  
Ref. No. 26

Date: September 29, 1992

To: Tennessee Transformer File #33635

From: Craig Stannard, Geologist, TDSF CJS

Subject: Tennessee Transformer Site Reconnaissance and Fact Gathering

On 9-22-92, Craig Stannard telephoned the Chattanooga-Hamilton County Regional Planning Commission Office in Chattanooga (757-5216) and requested population data for the Tennessee Transformer site. Ms. Yuen Lee informed CJS that the population of Rossville is 3,601, the population of East Ridge is 21,101, the population of Lookout Mountain is 1,901, and the population of Fort Oglethorpe is 5,880.

Later that day, CJS telephoned Andrew (Drew) Thornton with the TVA Data Collection Services Office in Knoxville (632-2859) and requested stream flow data for Chattanooga Creek and Dobbs Branch. There was no data on Dobbs Branch but for Chattanooga Creek, the Flintstone gauging station showed an average flow over a 14 year period of approximately 87 cfs. This was for a drainage area of approximately 50 square miles. Drew had no data for areas farther downstream other than that the drainage area of Chattanooga Creek in the vicinity of Broad Street was approximately 72 square miles. At an average cfs flow (based on the data he supplied) of approximately 1.74 cfs per square mile of drainage area, it can be estimated that the average flow of Chattanooga Creek in the area of Broad Street is approximately 125 cfs.

On 9-23-92, CJS and Ferman Miller conducted a brief reconnaissance of the Tennessee Transformer site for the purpose of gathering additional demographic data. It was noted that the Starkey Printing Co. parking lot was both gravel and asphalt while the Tennessee Transformer

parking lot was entirely dirt and gravel. It was noted that the closest residence is approximately 100 feet to the east of the site. Industries surrounding the site include Industrial Technologies, the Ben O'Neal Co., Graphic Impressions, K&H Trailer Repair, Nichols Fleet Equipment, Lowrance Electric, the R.B. Poole Co., the Barry Webster Co., Hartford Carpet Mills, Alloway Stamping and Machine Co., Haygood Mobile Equipment Specialist, Mathews Electric Supply, Southern Fluidpower, and Builders Hardware. It was also noted that drainage from the site appeared to be to the south via a storm sewer/surface ditch(concrete lined) that paralleled the railroad track on the west side of the site. It was noted that the abandoned Silk Screen Sign Co.(DSF Master List) is approximately 1 block to the west of the site.

Site No. TND 003328960  
Ref. No. 27

"Rite in the Rain"



ALL-WEATHER  
**LINE RULE**

Notebook No. 391

Landes Co. #33633
Hamilton Co., Tenn.

"the Rain"  
WRITING PAPER ®



## Division of Superfund

McCallie Ave

Tenn. 37

6-4-5780

3/19/93 CJS (Craig Stannard)

and Arthur Kolodziejewski (AK) arrive  
at site at 1:20 PM

Weather - overcast, 50° breezy

Looked at Stainless Blk. orange

Clay is at one end, nothing else.

Paint

Shel 2 5 gall buckets

40' x 40') 1-50 gall drum

benzine disinfectant

Photo #1

looking east at AK and

South side of Assembly Blk.

Photo #2 - same as before

Photo #3 west at southwest  
corner of site.

#4 ~~1~~ 1:45 looking south along western side of site #9 - to N

#5 looking east along north side of trench #10 - Client  
Bldg. orange ditch leading east from looking dock /  
ditch is 10' wide + 4' deep.

#6 - looking east at staircase Photo  
Bldg. back

#7 - low shelf looking north ! 3 feet  
stone about + gravel on surface #17  
#8 Looking west at Pm Bldg. and see  
(1:55 PM)

- #45 looking N at west  
long western side of to concrete below piles
- #10 - looking east along  
line set center of site ditch in center  
of side of frame
- #21, 12, 13, 14 - scrap wood,  
boarding dock /  
(20) 55 gal drums with scrap  
10 week + 4 days.  
and fiberglass frame
- Photo #2 15, 16 - shot at  
eastern end of site. water in  
3 feet wide, 6" to 3" deep
- shot looking north.
- #17, 18 Saw steel T-beams  
+ gravel on surface  
and scaffolding  
west of Pan Bldg.

Concrete Form February  
Construction: Lennear's

Fo

Photo #19 - drums at  
west end of  
shed (4)  
1 partially full

Various trash drums in  
shed (10 or so)

#20 - Looking west  
along Hooker Ave.

#21 - The Pan Bldg.

#22 - The main Assembly bldg.  
2:30 pm.

Chain link fence with barbed  
wire on top & Gates open

and the  
poetry from my

~~228~~ by now + now

Yerwad Marathas

Ward - 1931

Figure 87

L-6 C12

9:45 A.M.

from us - by some  
way or other - we may

# **POOR LEGIBILITY**

**PARTS OF THIS DOCUMENT  
MAY BE UNREADABLE, DUE TO  
THE QUALITY OF THE  
ORIGINAL**

Site No. TND 003328960  
Ref. No. 28  
(see Appendix C)

Site No. TND 003328960  
Ref. No. 29

## TRIP REPORT

Site #33-633

Date: **March 19, 1993 and April 7, 1993**

Inspector: **Craig Stannard (CJS)**

Owner / Facility: **Robert Brown**

Type Facility: **Formerly a concrete form and scaffolding manufacturer and renter; currently, a site for the storage of industrial foam scraps**

County: **Hamilton**                            City: **Chattanooga**

Purpose of Visit: **Site reconnaissance**

Individuals Contacted: **None**

Other DSF Personnel Present: **Artur Kolodziejjski (AK), Wayne Everett (WSE)**

Other Personnel Present: **None**

Weather Conditions: **On 3/19/93 - overcast, breezy, 50s and on 4/7/93 - partly cloudy, gentle breeze, 60s**

Samples Collected:      None  Water  Soil  Split

Photos Taken:      Yes

### Comments and Discussion:

CJS telephoned Mr. Wright Tisdale, attorney for the FMC Acquisition Corporation (the presumed owner of the site at this time), on the morning of March 19, 1993 to notify him of the CFO's intended visit to the Landes Company site at 314 Hooker Rd. in Chattanooga. Mr. Tisdale was not in but a message was left with his secretary.

CJS and AK arrived at the Landes Company site at 1:20 PM on 3/19/93 to conduct a site reconnaissance for the PA report (see Site Sketch and Topographic Map). A second visit was made to the site, this time with Wayne Everett, on 4/7/93, to gain additional information. The following observations were made.

The site covers approximately 17 acres in the Piney Woods area of Chattanooga and is basically flat. There are 6 industrial buildings and 2 trailers on the site. The building listed as #1 on the Site Sketch was once known as the "stainless building". It is currently empty inside with the exception of a pile of red clay at the east end.

The building listed as #2 on the Site Sketch was once known as the "assembly building". This building is currently being used to store foam rubber scraps. There were two vehicles parked outside indicating that there may be two workers involved in the current activities. A truck and rail loading dock is located at the northwest corner of the assembly building. A grass-lined drainage ditch, 10 feet wide and 4 feet deep, runs along the north side of the assembly building. This ditch starts at the loading dock and heads east, emptying into a small stream (a tributary to Chattanooga Creek) that crosses the site at its eastern end. The ditch had some water in it which appeared to be clear. A railroad track parallels the ditch and the north side of the assembly building and crosses the site in an east-west direction.

The building listed as #6 on the Site Sketch is currently empty except for two small piles of sand and clay and a room full of fiberglass insulation products and boxes of polyethylene sheeting. A large (150 foot by 30 foot by 15 feet) pile of unknown waste (reportedly coal, coke and/or tar material) lies just off of the Landes site to the north of this building.

Most of the site is enclosed with a tall, chain-link, barbed-wire fence. The fence has several large holes in it along the southern side of the site which could permit human access. There are two gated entrances along Hooker Road which provide access to the site. The gates are open during the daytime and the site is not guarded.

The building listed as #3 on the Site Sketch was a former paint shed. This concrete floored building is empty with the exception of two 5-gallon buckets and one 50-gallon drum. The buckets are half full with dry yellow paint and the drum is labelled "lemon disinfectant". Building #3 has a small storage shed attached to it on the east side. This addition contains 4 drums (emergency overpacks) left there by Ferguson Harbor Service, Inc. (the State's Superfund contractor) during a partial cleanup at the site in 1991.

Most of the site is bare ground. Heavily traveled areas around the main buildings are sparsely vegetated with grass and weeds. The grass and weeds are heavier in less traveled areas. The natural soil at the site appears to be a cherty red clay. The driveway into the site is gravel covered and the area immediately to the west of the assembly building (area between buildings #2 and #6 on the Site Sketch) is surfaced in concrete. A shallow drainage ditch skirts the site just outside of the fence along the southern side. This ditch receives runoff from industrial properties to the west such as Velsicol and Chattanooga Coke as well as from the Landes site itself. This ditch empties into the small stream that crosses the eastern side of the site.

The building listed as #4 on the Site Sketch was once known as the "pan building". It is a large quonset-like structure. This building was locked and was not entered. The pan building was reportedly once used to store latex sludge.

The building listed as #5 on the Site Sketch was once known as the "saw shed". It is currently being used to store lumber, metal scaffolding and I-beams. There are several (approximately 10) 55-gallon steel drums

present at the eastern end of the shed. Some of the drums are filled or partially filled with oil. Most of them contain scrap metal and trash. There are about four drums along the western end of the shed which may have industrial chemicals in them. One drum is labelled "concrete form releasant" and appears to be full. The others appear to be empty or almost empty.

One of the two trailers at the northeast corner of the site is currently being used to run a small business on the site known as Formco of Tennessee. This business is involved in the rental of concrete forms and supplies (those in the shed) but is a much smaller operation than was once active at the site. There appear to be at least two individuals at this business (two cars outside). There are scrap piles behind the trailers consisting of old boards and pallets, old fiberglass bins stacked up in rows, and assorted scrap metal, I-beams, scaffolding, and construction debris. The other trailer appears to be used as a dwelling.

There are at least 4, and possibly 5, monitoring wells on the site. One of the wells is located on the south side of the assembly building, is flush with the driveway, and S-5 is inscribed on the brass cap. The other wells stick up approximately 2 and 1/2 feet above the site.

The small creek located at the eastern end of the site is approximately 2 to 3 inches deep and 3 feet wide. The eastern portion of the site is densely vegetated with bushes and trees. Storm drains were noted throughout the site which conduct runoff from the site and areas to the west of the site into the creek at the site's east end. Concrete debris and scrap metal debris was noted in a shallow drainage swale near the center of the site.

The southeastern portion of the site (approximately 3 acres) is outside of the fenced area and is adjacent to a wetlands area that lies just to the south. This area is easily accessible by local residents. A railroad track (serving Velsicol and Chattanooga Coke) lies along the southern fence line of the site.

The southeastern portion of the site is littered with garbage, piles of foundry sand and slag, and industrial debris. One label in the debris read FMC Construction Company.

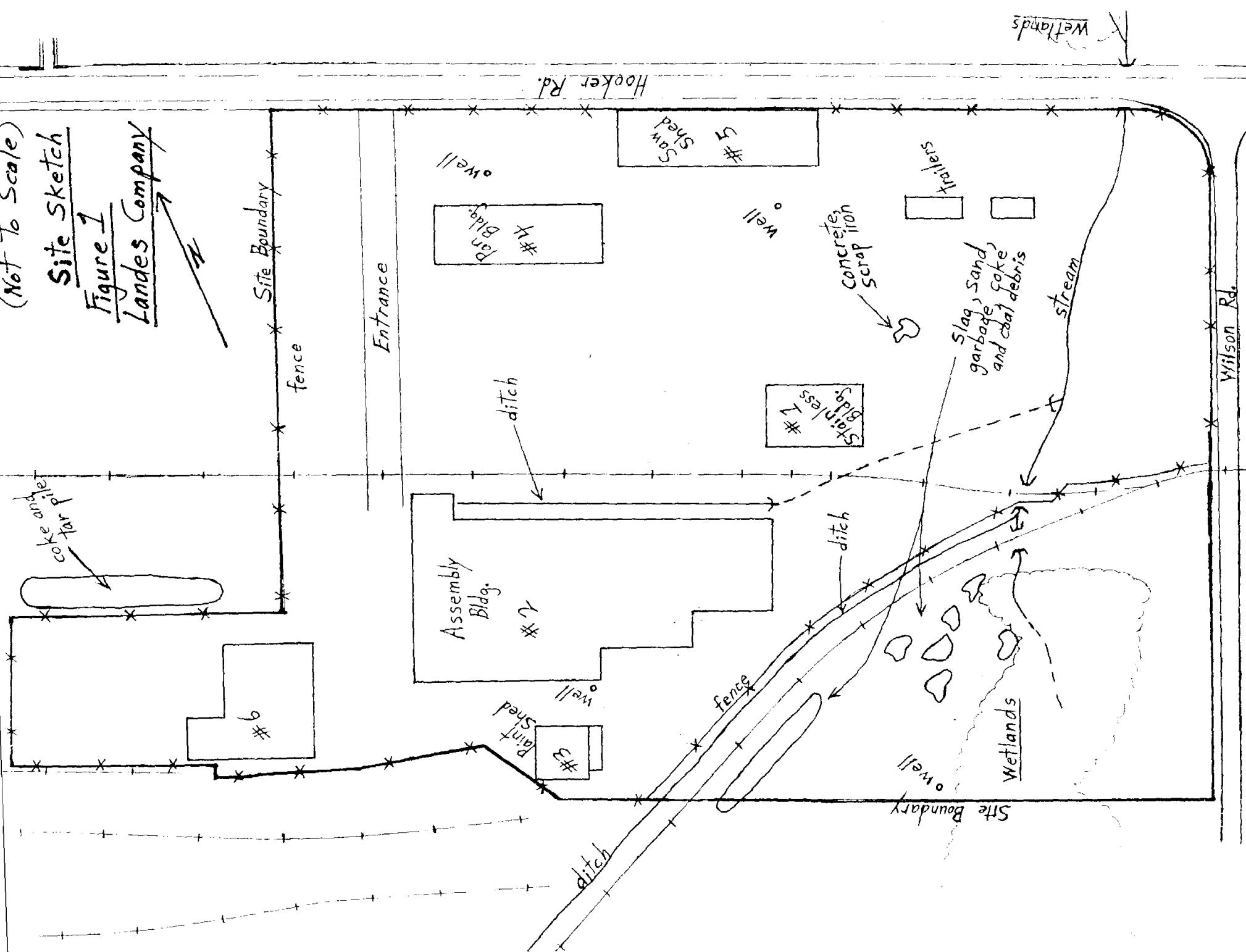
Of special note is the fact that Wright Tisdale telephoned the TDSF office and spoke with CJS on 4/7/93 and explained that FMC Acquisition Corporation went bankrupt in 1991 and sold the site to Robert Brown. Wayne Everett confirmed this information after visiting the Hamilton County Courthouse on 4/8/93 and examining the records in the tax assessors office. Robert Brown currently owns the site and he is associated with the Investment Property Co.

---

Inspector's Signature, date

(Not to Scale)

Site Sketch  
Figure 1  
Landes Company



Site No. TND 003328960  
Ref. No. 30

Date: April 14, 1993  
To: Landes Co. File #33-633  
From: Craig Stannard, Geologist, CFO  
Subject: Public Drinking Water, Chattanooga Area

On April 14, 1993, Gary Burris of the Tennessee Division of Drinking Water Supply, informed Craig Stannard that the entire Chattanooga area and surrounding suburbs are supplied drinking water by the Tennessee American Water Company on Amnicola Blvd. The attached form lists the essential data concerning this utility system.

## PUBLIC WATER SYSTEM DATA

Key Identification Number

0000107

Name of Water System TENNESSEE - AMERICAN WATER COMPANY  
 Mailing Address 1101 BROAD STREET  
 City CHATTANOOGA County HAMILTON  
 Zip Code 37402 Office Phone 755-7600 Plant Phone

Title of Person	Time	Certification	Interviewed	Correspondence
VICE PRESIDENT	RICHARD SULLIVAN			X
OPERATIONS MANAGER	BILL HOBBS (755-7609)			cc
PRODUCTION SUPT.	DAVE SNYDER (# 1515)	F-4/D-3	X	cc
DISTRIBUTION SUPT.	CHARLIE DOWDY			
WATER QUALITY SUPT.	SUSAN HOLMES (755-7649 LAB)		X	

Source			INTAKE LOCATION		MARK (ONE ONLY)		TREATMENT												
No		Name	DEG	MIN	SEC	SURFACE	GROUND	PURCHASED	AERATION	PRECHLORINATION	COAGULATION	SEDIMENTATION	FILTRATION	CORROSION CONTROL	SOFTENING	LASTING ODOOR CONTROL	IRON REMOVAL	FLUORINE ADJUSTMENT	DISINFECTION
1	R	TENNESSEE RIVER	35	03	12	X			X	X	X	X	X	X	X	X	X	X	X
	A		85	17	21														
2	R																		
	A																		
3	R																		
	A																		
4	R																		
	A																		

Name of Systems served by this System	Other Systems Connected to this System
EASTSIDE U.D.	CATOOSA U.D. (GEORGIA)
FT. OGLETHORPE W.S (GEORGIA)	
HIXSON U.D.	
SIGNAL MTN W.S.	
WALKER CO. U.D. (GEORGIA)	

Plant Classification F-4  
 Distribution Classification D-2 Date Laboratory Certified \_\_\_\_\_  
 Design Capacity 50,000 (gpm) Filter Area \_\_\_\_\_ (sq. ft.) Filter Rate 52.0 MIXED MEDIA (gpm/ft<sup>2</sup>)  
 Raw Water Pump Capacity 75,000 (gpm) Finished Water Pump Capacity 58,330 (gpm)  
 Distribution Storage Gravity Flow 19.4 (million gallons) Emergency Power Only 3 DIESEL PUMPS (gal/day)  
 Clearwell Capacity 5.38 (million gallons) Date Cross Connection Control Program Approved 5-23-72  
 Date of Last Inorganic Chemical Analysis 4-21-89 Date of Last Organic Chemical Analysis 4-6-89  
 Date of Last Radionuclide Analysis 10-16-89 Date Emergency Plan Approved 10-31-89 Last Rating 96  
 Number of Wholesale Customers 6 Number of Meters 177,855 Date of Last Survey 5-16-90  
 Remarks: VOCs Sodium, Corr. \* TOTAL CUSTOMERS: 5,027 IN GA  
ALL 1-25-90 60,602 IN TN  
OK L.L. = 1.5 65,629

Date of Survey	Number of Connections	Household Factor	Population Served	Average Daily Pumpage (million gallons)	Maximum Day Pumpage (million gallons)	Engineer	Rating	Year
								1994
								1993
								1992
								1991
5-16-90	60602	2.71	164,282	36.52	43.31	MTD	99	1990
5-18-88	65368	2.71	177,147	35.54	44.60	MTD	96	1988

Site No. TND 003328960  
Ref. No. 31

Date: April 15, 1993  
To: Landes Co. File #33-633  
From: Craig Stannard, Geologist, CFO  
Subject: Chattanooga Creek

On April 15, 1993, Joe Hartman with the Tennessee Division of Water Pollution Control (TDWPC), stated to Craig Stannard that the TDWPC had actual photographic evidence that people fish in Chattanooga Creek. He also stated that he has personally witnessed people fishing in the creek.

Site No. TND 003328960  
Ref. No. 32

1. ID NO: TND 00-332-8960 NH: Concrete Forms Corporation INPLIER DATE  
 ADDRESS: 314 Hooker Rd. Major   
Chattanooga, TN 37410 Non-major

2. PROGRAM: Hazardous Waste  Solid Waste  ENTRY TYPE: New  Update

3. DATE OF INITIAL EVALUATION:

## TYPE OF EVALUATION

4. EVALUATION INSPECTION <u>3/11/85</u>	A. <u>FILL CHECKLIST</u> 1. HW Gen <input type="checkbox"/> 4. HW Sq Gen <input checked="" type="checkbox"/> 7. SW Landfill <input type="checkbox"/> 2. HW Trans <input type="checkbox"/> 5. HW Non-Reso <input type="checkbox"/>	3. HW TSDF <input type="checkbox"/> 6. SW Processing Facility <input type="checkbox"/> 5. Part A Modification/Withdrawal Eval <input type="checkbox"/> 6. Complaint Follow-up NOS <input type="checkbox"/> 7. Emergency Response <input type="checkbox"/> 8. Other <input type="checkbox"/>
	B. <u>OTHER</u> 1. Partial Checklist <input type="checkbox"/> 2. QL Eval <input type="checkbox"/> 3. P-QL Eval <input type="checkbox"/> 4. Special Waste Evaluation <input type="checkbox"/>	5. Part A Modification/Withdrawal Eval <input type="checkbox"/> 6. Complaint Follow-up NOS <input type="checkbox"/> 7. Emergency Response <input type="checkbox"/> 8. Other <input type="checkbox"/>
5. SAMPLING INSPECTION <u>/ /</u>	1. Generated Waste <input type="checkbox"/> 3. Soil/Sediment <input type="checkbox"/> 2. Received Waste <input type="checkbox"/> 4. Surface water/Leachate <input type="checkbox"/>	5. Ground Water <input type="checkbox"/> 6. Ambient Air <input type="checkbox"/>
6. SPECIAL INSPECTION <u>/ /</u>	1. Groundwater Monitoring <input type="checkbox"/> 2. Other (describe in comments) <input type="checkbox"/>	
7. RECORDS/REPORT REVIEW (Non-permitting) <u>/ /</u>	1. Closure/Post Closure Cost Estimates <input type="checkbox"/> 2. Closure/Post Closure Plans <input type="checkbox"/> 3. Financial Instruments <input type="checkbox"/> 4. Other Required TSDF Plans <input type="checkbox"/> 5. Special Waste Requirements <input type="checkbox"/> 6. Landfill Planning Annual Report <input type="checkbox"/>	7. Manifest Reports <input type="checkbox"/> 8. Manifest Records <input type="checkbox"/> 9. CMM Data <input type="checkbox"/> 10. CMM Plans <input type="checkbox"/> 11. Other <input type="checkbox"/>
8. FOLLOW-UP INSPECTION <u>/ /</u>	1. With Field Office Personnel Only <input type="checkbox"/> 2. With Central Office Personnel <input type="checkbox"/>	
9. INCIDENT PROCESSING <u>/ /</u>	1. Oral Complaint <input type="checkbox"/> 3. Emergency Response Call <input type="checkbox"/> 2. Written Complaint <input type="checkbox"/> 4. Other (describe) <input type="checkbox"/>	
10. MISCELLANEOUS <u>/ /</u>	1. Facility Status, Evaluation, Meetings/Letters <input type="checkbox"/> 2. Other (describe in comments) <input type="checkbox"/>	

11. VIOLATION CODES: None

12. ENFORCEMENT ACTIONS:	Date Action Taken	Sched Comp Date	Actual Comp Date
Warning Letter	<u>/ /</u>	<u>/ /</u>	<u>/ /</u>
Notice of Non-Compliance	<u>/ /</u>	<u>/ /</u>	<u>/ /</u>
Compliance Review Meeting	<u>/ /</u>	<u>/ /</u>	<u>/ /</u>
Referred to Enforcement Section	<u>/ /</u>		

13. COMMENTS: (continue on reverse if necessary)

No violations were observed.

14. Prepared by:  
Burl H. Maupin REC'D BY: 081 DATE: 3/14/85 FILE NUMBER: 105

Site No. TND 003328960  
Ref. No. 33

**TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT**

## OFFICE CORRESPONDENCE

DATE: January 28, 1991

TO: Bob Vaughn, Chief, Enforcement, DSWM, Nashville

FROM: Guy M. Moose, DSWM, Chattanooga

SUBJECT: Enforcement Action Request File (Referral)

Landes Company, Inc.

NNF-33-105-0123

This memorandum is submitted to request enforcement assistance for the aforementioned facility.

Listed below are the violations for which enforcement action is warranted:

Rule 1200-1-11-.07(1)(b)1  
Code (3510)  
Class A\*

Disposing of a hazardous waste without a permit or interim status.

Rule 1200-1-11-.07, .03(1)(b)

Failure to make a hazardous waste determination

Code (0010)  
Class C

## I. SUMMARY:

In response to a complaint filed with the Chattanooga Field Office alleging improper disposal of paints, thinners and lead shot blast balls, a site investigation ensued on June 14, 1990.

Observations during our site investigation revealed an illegal waste disposal site waste pile within the vicinity of the Landes sand blasting rig.

On October 15, 1990, the DSWM collected samples from the waste piles at the Landes Company. Analytical results revealed the foundry sand/baghouse dust to be a hazardous waste for the characteristic of lead (D008)."

On January 14, 1991, the Landes Company was issued a Notice of Violation citing violation of Rule 1200-1-11-.07(1)(b)1 for disposing of a hazardous waste on site without a permit or interim status.

## II. PREVIOUS COMPLIANCE HISTORY:

Notice of Violation issued June 18, 1991, for failing to make a hazardous waste determination as defined by Rule 1200-1-11-.03(1)(b).

Compliance achieved on August 29, 1990.

III. GENERAL INFORMATION:

Facility Location:

Landes Company, Inc.  
314 Hooker Road  
Chattanooga, Tennessee 37410  
NNF-33-105-0123

Facility Mailing Address:

Landes Company, Inc.  
314 Hooker Road  
Chattanooga, Tennessee 37410

Primary Contacts:

Russell W. Landes, President  
Landes Company, Inc.  
314 Hooker Road  
Chattanooga, Tennessee 37410  
(615) 821-6013

DSWM Personnel Involved:

Jim Childress, DSWM, Chattanooga  
David Smith, DSWM, Chattanooga

Environmental Harm:

Test results show elevated E. P. Toxicity levels for Lead (D008)

Environmental harm has not yet been established.

Results Requested:

Commissioners Order

Priority:

Medium, 6

GMM/31030028

Site No. TND 003328960  
Ref. No. 34

## TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

DATE: February 1, 1991  
TO: DSWM Files, Chattanooga Field Office  
FROM:   
David Smith, Geologist, DSWM  
SUBJECT: Landes Corp. Site Sampling

On October 15, 1990 at 1215 hours, DSWM staff geologist arrived at Landes Corp. to take samples from the sand blasting yard on the east side of the property.

I contacted three (3) workers about a key to the gate leading into the site in question. I was given the key and told who to return it to. Except for these contract workers, no one else was on the site.

The samples that were taken were not split with the company because no one was there to represent them. Three samples were taken at this time; two of these from the slag pile and one from the sand piles. All were composite samples.

DS/31010032

FROM	DATE
------	------

TO

Site No. TND 003328960  
Ref. No. 35

# TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

## OFFICE CORRESPONDENCE

DATE: June 19, 1991  
TO: Bob Vaughan, Chief, Enforcement, DSWM, Nashville  
FROM: Guy M. Moose, DSWM, Nashville  
SUBJECT: Landes Company  
Enforcement Action Request File (Addendum)  
NNF-33-105-0123

On June 7, 1991, additional hazardous waste was observed onsite. A corrosive waste having a pH range of 12.4-13.6. (photographs attached). This site is accessible to the public and therefore in my opinion needs either remediation or the site secured/restricted immediately. Please check with CGC as to the status.

The following is our account of the investigations and observations relative to the additional hazardous waste on the Landes Company property.

On June 7, 1991, 9:30 AM at the request of Stephen Ruff, (1) Channel 12 News Reporter, a site investigation ensued on June 7, (2) 1991, 10:00 AM. At 10:00 AM Stephen Ruff, Janet Dutto, (3) and Guy Moose rendezvoused at Alton Park Recreation Center on Central Avenue. Stephen Ruff directed the DSWM personnel to the rear of the Landes Company and Chattanooga Coke and Chemical property via Wilson Road and a railroad easement. Mr. Ruff pointed out several areas of concern in the ditch line along the railroad tracks to the rear of the Landes Company and Chattanooga Coke and Chemical. Guy Moose explained to Mr. Ruff that these areas of concern appeared to be products of Chattanooga Coke and Chemical (a Superfund issue), and the Division of Water Pollution. Mr. Ruff was also told that perhaps the mottling in the ditch was a result of different bacteria. Guy Moose explained to Mr. Ruff that the DSWM would document our investigation and refer to DSF and DWP. Mr. Ruff then led DSWM personnel to the Landes Company property where additional illegal waste dumping has occurred since the DSWM site visit of October 15, 1990. Observations revealed the dump to contain some 15-20 fifty-five (55) gallon drums. These drums were either empty or contained what appeared to be non-hazardous debris/material. One fifteen-twenty gallon plastic drum was observed labeled with the words Ammonium Hydroxide, and corrosive material (photographs taken). Stephen Ruff then interviewed Guy Moose for a statement as to our anticipated course of action. Mr. Ruff was informed that the DSWM and DSF would schedule a joint investigation this afternoon, with possibly some preliminary testing, and if necessary contact Hamilton County Emergency Management for assistance. This concluded the interview and all parties left the property.

At 3:30 PM, Guy Moose, Wayne Everett,<sup>(4)</sup> and David Smith<sup>(5)</sup> visited the aforementioned dump site and tested the contents of the plastic drum labeled Ammonium Hydroxide. The contents within the drum tested at 12:4 PH using indicator paper and 13.6 using PH probe meter.

Mr. Wayne Everett stated that since there was only small quantities (5-10gals.) on site and none was presently leaking, the DSF could not classify this situation as an imminent health hazard and therefore could not authorize a state cleanup contractor for assistance. Mr. Everett stated that if the DSWM could get no response then perhaps the DSF could assist in having the hazardous waste/material overpacked and secured on Monday, June 10, 1991.

Upon returning<sup>(6)</sup> to the office at 4:30 PM, Guy Moose telephoned Mr. Rob Strickland<sup>(7)</sup> of Furrow Auction Co., who contracted to have the Landes Company<sup>(8)</sup> cleaned out. Mr. Strickland immediately telephoned a Mr. Bob Turner<sup>(9)</sup> who actually cleaned the Landes Company. In discussing the situation with Mr. Turner through a three way conservation, Mr. Turner stated that he placed nothing on the Landes property and knew nothing of a drum of Ammonium Hydroxide. At 5:10 PM, Guy Moose telephoned the Hamilton County Emergency Response and requested assistance in securing the drum within the Landes Company Facilities fenced-in area. A meeting convened on site at 6:15<sup>(10)</sup> PM with the Hamilton County Emergency Response team and Aubry Rodgers,<sup>(11)</sup> Deputy Fire Chief. Mr. Rodgers stated that they could contain any spills resulting from the drum but could not transport/move the container. Mr. Rodgers stated that they could call an emergency response team (contractor) to overpack and move the drum if the DSWM would authorize and pay for it. Since there are no avenues for such authorization within the DSWM, the Hamilton County Emergency Response team concealed the Ammonium Hydroxide container by placing a 55 gallon drum over it. All parties then left the site at approximately 6:45 PM.

On June 10, 1991, Guy Moose phoned Bob Turner in an attempt to have the corrosive waste moved into the Landes Company's fenced in area. Mr. Turner was out of his office, therefore, a message was left for Mr. Turner to telephone Mr. Moose. Guy Moose in turn phoned Bob Vaughan, Chief, Enforcement, DSWM, on the appropriate course of action necessary for the site cleanup. Bob Vaughan phoned Joe Sanders,<sup>(12)</sup> OGC, state attorney and discussed the situation. Joe Sanders telephoned Mr. Wright Tisdale<sup>(13)</sup> relative to the corrosive waste on site and cleanup. Joe Sanders telephoned Guy Moose and stated that Mr. Tisdale indicated there would be an effort to have the material cleaned up and secured. Wayne Everett and Guy M. Moose agreed to allow forty-eight hours for Mr. Tisdale's response before proceeding with cleanup through DSF's Emergency Response contractors.

On June 12, 1991, Mr. Bob Turner returned my call and he agreed to come to Chattanooga and move the waste into the Landes Company Facility on the morning of June 13, 1991. Wayne Everett and Guy Moose agreed to wait until Thursday before contacting state contractors. David Smith investigated the site where the ammonium hydroxide was observed on June 7, 1991. Mr. Smith's investigation revealed the drum on-site.

On June 13, 1991, Guy Moose telephoned Mr. Rob Strickland at 9:45 AM. Mr. Strickland stated that Bob Turner had anticipated being at the Landes Company site today, but could not get authorization from Mr. Wright Tisdale. Mr. Strickland stated that messages were left with Mr. Tisdale's secretary concerning the waste issue. Mr. Strickland and Guy Moose (by conference call) telephoned Mr. Tisdale's Knoxville, Tennessee, and North Carolina office and left messages concerning the Landes Company situation. Guy Moose telephoned Mr. Strickland again at 11:45 AM to check on status. Mr. Strickland was out so a message was left for R.S. to contact Guy Moose.

At 2:15 PM Mr. Strickland returned call. Mr. Strickland stated that Mr. Tisdale had still not authorized the moving of the waste. Immediately Guy Moose contacted Wayne Everett, who in turn contacted the DSF, Nashville for an emergency response team (state contractors) to remediate the hazardous material on the Landes Company site.

- (1) Stephen Ruff - Channel 12, News Reporter, Chattanooga, TN
- (2) Janet Dutto - Engineer, DSWM, Chattanooga, TN
- (3) Guy Moose - Regional Director, DSWM, Chattanooga, TN
- (4) Wayne Everett - Manager, DSF, Chattanooga, TN
- (5) David Smith - Geologist, DSWM, Chattanooga, TN
- (6) Rob Strickland - Furrow Auction Co., Knoxville, TN  
Contacted with Bob Turner to clean out  
Landes facility
- (7) Bob Turner - Knoxville, TN - Cleaned out trash and debris  
from Landes Company
- (8) Aubray Rodgers - Deputy, Fire Chief, Chattanooga, TN  
Hamilton County Emergency Management
- (9) Bob Vaughan - Chief of Enforcement, DSWM, Nashville, TN
- (10) Joe Sanders - OGC, Attorney, State of Tennessee
- (11) Wright Tisdale - Attorney for FMC Aquisition Company  
FMC Aquisition Company - Owner of Landes Company

Site No. TND 003328960  
Ref. No. 36

# TENNESSEE DEPARTMENT OF PUBLIC HEALTH

## OFFICE CORRESPONDENCE

DATE: September 1, 1983  
TO: Water Management Files  
FROM: Phil Stewart   
SUBJECT: Sewer Connection at Co

On August 29, 1983, Hal Schook with Concrete Forms, Inc., called and reported that he has completed construction of the sewer line connecting his plant's wastewater discharges to the Chattanooga Sewer system. He stated that the new work had been in service since August 26, and that it was ready for inspection. I told him that we would wait one or two months to allow the area around his plant to dry-up before making the inspection to determine compliance with our earlier directions.

PLS/agk

Site No. TND 003328960  
Ref. No. 37

## TENNESSEE DEPARTMENT OF CONSERVATION

MEMO

DATE: June 28, 1991

TO: Phil Stewart

FROM: Greg Denton

SUBJECT: Chattanooga Creek fish data

Rick - of the  
Because of sites in the  
Superfund watershed, I thought  
that you might  
want to see this.  
RWS 7/2  
JC 7/2  
WSE

On June 27, I received the results of the organic contaminant analyses of fish from Chattanooga Creek. (I had previously received the results from the metals analyses which did not indicate problems for arsenic, cadmium, chromium, copper, lead, and mercury.) Following are certain organic parameter results: (All are composited fillet samples)

TYPE SAMPLE	DIELDRIN	CHLORDANE	PCBS	DDT
Channel catfish	<b>8.184</b>	<b>0.314</b>	<b>1.43</b>	0.636
Largemouth bass	0.086	0.028	0.12	0.051
Common carp	0.120	0.160	<b>1.14</b>	0.263

The numbers that are bolded are those that exceed FDA Action Levels or trigger points used by the Division. The dieldrin number for the catfish sample seems especially high. (I have a call in to the lab to confirm the value.) If correct, dieldrin level in that sample is 27 times the FDA level (0.3 ppm). Chlordane and PCBs also appear high.

While Chattanooga Creek is already posted, according to Dale Rector who collected the samples, there is an encampment of homeless people in this area of the creek and Dale saw them fishing. It is possible that we need to recon this area again and determine the need to take additional measures such as posting more signs, or talking to fishermen about the hazards of consuming these fish, or collecting more fish. Please advise.

cc. Garland Wiggins

Site No. TND 003328960  
Ref. No. 38

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DIVISION OF WATER POLLUTION CONTROL  
OFFICE MEMORANDUM

Date: April 29, 1992

To: The Files

From: RS for Joe Hartman

Subject: FMC Acquisition Corporation  
formerly The Landes Company  
formerly CFC Fabrication Corporation  
formerly Concrete Forms Corporation  
304 Hooker Road  
Chattanooga, Tennessee 37410

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On February 26, 1992, Phil Stewart and Joe Hartman inspected the site on Hooker Road at Wilson Road now owned by FMC Acquisition Corporation, Hal C. Shook, President. All the former activity at the site, i.e. manufacture and rental of concrete forms, has ceased, and all equipment removed. The only activity currently at the site is warehouseing, with Woodbridge Foam Fabricating, Inc., storing foam rubber scraps, and Hydro-Vac Services storing a latex sludge material. All the materials being stored were inside large buildings and were having no current effect on water draining through the site. However, there was evidence that some latex sludge wastewater had discharged to the storm drainage system from the building nearest Hooker Road, when the material was first dumped in the building. The Division of Solid Waste Management has ordered Hydro-Vac to remove the material from the site by April 28, 1992.

The report entitled "The Environmental Quality of Chattanooga Creek," prepared for EPA by Dynamac Corporation, describes a small pipe discharging water to the drainage ditch at the culvert near the intersection of Hooker Road and Wilson Road. However, this pipe could not be located during the inspection. A return visit to the site will be made in an attempt to locate the pipe, possibly with the help of Dynamac personnel.

On April 9, 1992, Joe Hartman and Jill Davis stopped by the site and located a semi-active dump site at the rear of the property. The dump can be reached by car by following the railroad track from Wilson Road.

Maps are attached.

JDH/36062119

Attachments

cc: Division of Solid Waste Management

cc: Division of Super Fund

Site No. TND 003328960  
Ref. No. 39

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Report on

# **MORNINGSIDE CHEMICAL COMPANY**

## **TRENCH INVESTIGATION**

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Prepared for

**Tennessee Department  
of Health and Environment**

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Submitted by

**Tricil Environmental  
Management Inc.**

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Date

**NOVEMBER 1989**

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89-21

## SITE INVESTIGATION

BORING NO. MNSMW-1 (10F2)

MORNINGSIDE CHEMICAL

ACCOUNT NO.

202 HOOKER ROAD

ELEVATION 98.8 DATE 9-12-89 WEATHER P.CLOUDY, 85°

LEVEL 95.49 AT COMPLETION FIELD ENGINEER MICHAEL MATTHEWS  
10/13 11:13am

LEVEL 96.38 AT 25 HRS. DRILLER TRI-STATE, D. JONES

Sample Depth Feet From To	Stratum Depth Feet From To	Soil Classification	N SPT	W	PPR
	0 1.5'	COKE WASTE			
1.5 3.0		CLAY w/ SHALE + CHERT FRAGMENTS	7-8	9	
3.0 4.5		CLAY w/ SHALE + CHERT (15" RECOVERY)	4-7	11	
4.5 6.0		SAME (14" RECOVERY)	6-17	12	
6.0 7.5		SAME (14" RECOVERY)	7-12	15	
7.5 9.0		SAME F	7-10	12	
9.0 10.5		SAME w/ RED/WHITE MOTTLING	6-10	13	
10.5 12.0		SAME LESS CHERT & SHALE (21" RECOVERY)	7-10	11	
12.0 13.5		SAME	6-9	11	
13.5 15.0		SAME (20" RECOVERY)	5-6	7	

ELEVATION FROM BENCHMARK 1, CROSS CUT IN CONCRETE  
LOADING DOCK ELEV 100.00 ASSUMED. SEE NOTE WELL SURVEY

## TEST BORING LOG

## SITE INVESTIGATION

BORING NO. MNS MW-1 (20F2)

## MORNINGSIDE CHEMICAL

ACCOUNT NO.

202 HOOKER ROAD

ELEVATION.

**DATE** 9-12-89

WEATHER P, CLOUDY, 85°

KEYEL

AT COMPLETION FIELD ENGINEER MICHAEL MATTHEWS

LEVEL

AT 24 HRS. ORILLER TRI-STATE, D. JONES



## TEST BORING LOG

## SITE INVESTIGATION

BORING NO. MNS MW-2

MORNINGSIDE CHEMICAL

ACCOUNT NO.

102 HOOKER ROAD

ELEVATION 988.96.3 DATE 9-13-89 WEATHER Cloudy 80'

LEVEL 93.49 AT COMPLETION FIELD ENGINEER MICHAEL MATHEWS

LEVEL 94.20 AT 10/13/89 11:26a DRILLER TRISTATE D. JONES

Sample Depth Feet From To	Stratum Depth Feet From To	Soil Classification	N SPT	W	PPA
	0 2	TOP SOIL			
2 3.5	.	STIFF MOIST CLAY 15" RECOVERY	2-2 3		
3.5 5	.	MOIST CLAY WITH ORGANIC FRAGMENTS 18" RECOVERY	2-3 5		
5.0 6.5	.	STIFF CLAY WITH SHALE & CHERT FRAGMENTS 19" RECOVERY	4-4 9		
6.5 8	.	WATER @ 6.5' VERY STIFF CLAY 21" RECOVERY	10-10 15		
8 9.5	.	STIFF CLAY WITH SHALE 18" RECOVERY	15-15 17		
9.5 - 11	.	CLAY WITH SMALL AMOUNTS OF SHALE 18" RECOVERY	6-6 9		
11 12.5	.	CLAY 18" RECOVERY	4-4 8		
12.5 14	.	CLAY 20" RECOVERY	12-13 11		
14 15	15"	STIFF CLAY ROCK @ 15' NO RECOVERY	12 - REFUSAL		



## TEST BORING LOG

SITE INVESTIGATION  
MORNINGSIDE CHEMICAL  
202 HOOKER RD

BORING NO. MNSmw - 3

ACCOUNT NO.

ELEVATION 95.0 DATE 9-13/14-89 WEATHER P. CLOUDY 80°  
 LEVEL 92.52 AT COMPLETION FIELD ENGINEER MICHAEL MATHEWS  
 LEVEL 92.74 AT 10/13/89 11:37a DRILLER TRISTATE, D. JONES

Sample Depth Feet From	To	Stratum Depth Feet From	To	Soil Classification	N	W	PPR.
					SPT		
0	1			TOP SOIL			
1	2.5			12"-18" CLAY WITH COKE & VEGETATION 18"-30" CLAY	1-2		
2.5	4			CLAY 6" RECOVERY	1-1		
4	5.5			CLAY WATER @ 4' 10" 17" RECOVERY	1-1		
5.5	7.0			CLAY WITH SHALE 22" RECOVERY	2-3		
7.0	8.5			SOFT CLAY 22" RECOVERY	2-2		
8.5	10			STIFFER CLAY 15" RECOVERY	4-5		
10	11.5			CLAY - 22" RECOVERY	4-12		
11.5	13			STIFF CLAY 20" RECOVERY	6-10		
13	14.5			STIFF CLAY WITH SHALE 22" RECOVERY	6-8		

DRILLED TO 11.5' ON 9-13, STOPPED DUE TO THUNDER STORM. SAMPLE 11a-b COMPOSITED FROM 1'-11.5'. SAMPLE 12a-b COMPOSITED FROM 11.5'-16.0'.



## TEST BORING LOG

Site No. TND 003328960  
Ref. No.         40

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# **Uncontrolled Hazardous Waste Site Ranking System**

## **A Users Manual (HW-10)**

Originally Published in  
the July 16, 1982, *Federal Register*

United States  
Environmental Protection  
Agency

1984

Site No. TND 003328960  
Ref. No. 41



# TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER  
P.O. BOX 40747  
NASHVILLE, TENNESSEE 37204

December 19, 1985

Mr. Gordon Caruthers  
Solid Waste Management Division  
Department of Health & Environment  
701 Broadway  
Nashville, TN 37219

Dear Gordon:

In response to your call of December 19, I am happy to enclose descriptions of critical wildlife habitat of Tennessee, as designated by the U.S. Fish and Wildlife Service.

Please advise if I can be of further assistance.

Sincerely,

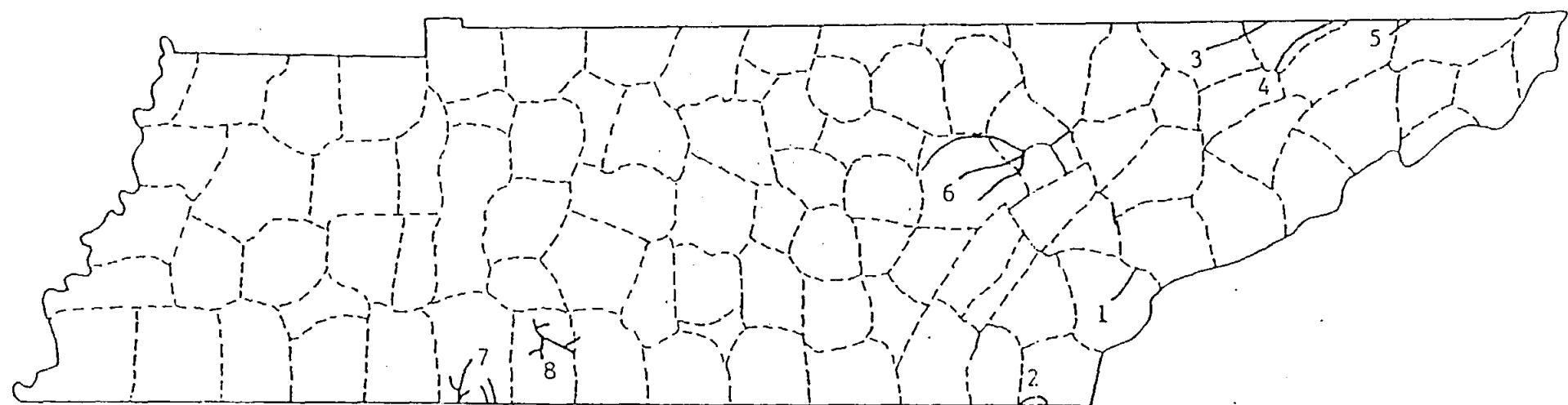
TENNESSEE WILDLIFE RESOURCES AGENCY

A handwritten signature in black ink, appearing to read "Bob" or "Robert".

Robert M. Hatcher, Coordinator  
Nongame/Endangered Species

RMH/ch  
enc.

OVER-VIEW OF CRITICAL HABITATS  
IN TENNESSEE



1. smokey madtom
2. amber darter, Conasauga logperch, trispot darter
3. yellowfin madtom, slender chub
4. slender chub
5. spotfin chub
6. spotfin chub
7. slackwater darter
8. slackwater darter

Site No. TND 003328960  
Ref. No. 42

DSF

# **soil survey of Hamilton County, Tennessee**

**United States Department of Agriculture  
Soil Conservation Service  
in cooperation with  
Tennessee Agricultural Experiment Station**



This soil is used mostly for woodland, hay, and pasture. Some areas are used for urban housing and local commercial districts.

This soil is moderately suited to agricultural use. The very slowly permeable clay subsoil retards root growth and the movement of water and air through the soil. Row crops such as corn and soybeans grow poorly on this soil. Pasture plants, such as common bermudagrass, tall fescue, and serecia lespedeza, grow fairly well.

This soil is moderately suited to use as woodland because of moderate available water capacity and the very slowly permeable clay subsoil. Trees that grow on this soil include loblolly pine and shortleaf pine. The clayey subsoil near the surface causes seedling mortality and limits the use of equipment when the soil is wet.

This soil is poorly suited to most urban uses. The very slow permeability, low strength, and high shrink-swell potential are limitations which are difficult to overcome. Engineering works and highway and street construction are limited by the low strength, high shrink-swell potential, and depth to bedrock of this soil.

This soil is in capability subclass IVe and woodland subclass 4c.

#### CcD—Colbert-Rock outcrop complex, 5 to 20 percent slopes.

**percent slopes.** This map unit consists of small areas of sloping and moderately steep Colbert soils and limestone Rock outcrop so intermingled that they could not be separated at the scale selected for mapping. Areas of this map unit range from about 3 to 25 acres in size, and individual areas of each component range from 0.1 acre to about 2 acres. Areas of Colbert soils make up from 35 to 70 percent of the map unit and average about 45 percent. Areas of Rock outcrop make up from 30 to 55 percent of the map unit and average about 40 percent.

Colbert soils are deep and moderately well drained. Typically, the surface layer is brown silt loam about 4 inches thick. The subsoil is yellowish brown plastic clay that extends to a depth of 45 inches. It is mottled in shades of brown and gray except in the upper 10 to 15 inches. The underlying material is olive clay which has gray and brown mottles. Limestone bedrock is at a depth of 55 inches.

Colbert soils are low in natural fertility and organic matter content. They range from slightly acid to strongly acid, except in the layers just above bedrock, which range from slightly acid to mildly alkaline. Permeability is very slow, retarding root growth and the movement of water and air through the soil. The available water capacity is only moderate because of the high clay content in the subsoil. The shrink-swell potential is high.

Rock outcrop is limestone bedrock that is exposed on land surface. In places, the rocks are level with the surface, and in other places, the rocks extend 2 to 3 feet above the surface.

Included with this unit in mapping are numerous small areas of a soil which is less than 40 inches deep to bedrock. Also included are a few areas of a soil that is less clayey in the upper part of the subsoil. Included soils make up 10 to 15 percent of the unit.

The soils are used mostly as woodland; in a few areas they are used for unimproved pasture.

These soils are poorly suited to farming, woodland, and most engineering uses. The large number of Rock outcrops is the most limiting feature. Other limiting features are very slow permeability, and the high shrink-swell potential. Some tree species that grow on these soils are hickory, chestnut oak, and eastern redcedar.

This complex is in capability subclass VII. The Colbert soils are in woodland subclass 4c.

**CdC—Colbert-Urban land complex, 2 to 12 percent slopes.** This map unit consists of deep, moderately well drained, gently sloping and sloping Colbert soils, Urban land, and disturbed areas that have been altered during construction. The areas of soils and Urban land are so intricately mixed or so small that they could not be separated at the scale selected for mapping. Areas of this map unit range from about 5 to 150 acres in size, and individual areas of each component range from 0.1 acre to about 5 acres. Colbert soils make up 25 to 45 percent of each mapped area, Urban land 25 to 45 percent, and disturbed areas 10 to 25 percent.

Typically, Colbert soils have a surface layer of brown silt loam 4 inches thick. The subsoil is yellowish brown clay that extends to a depth of 45 inches. It is mottled in shades of brown and gray, except in the upper 10 to 15 inches. The underlying material is olive clay and has gray and brown mottles. Limestone bedrock is at 55 inches.

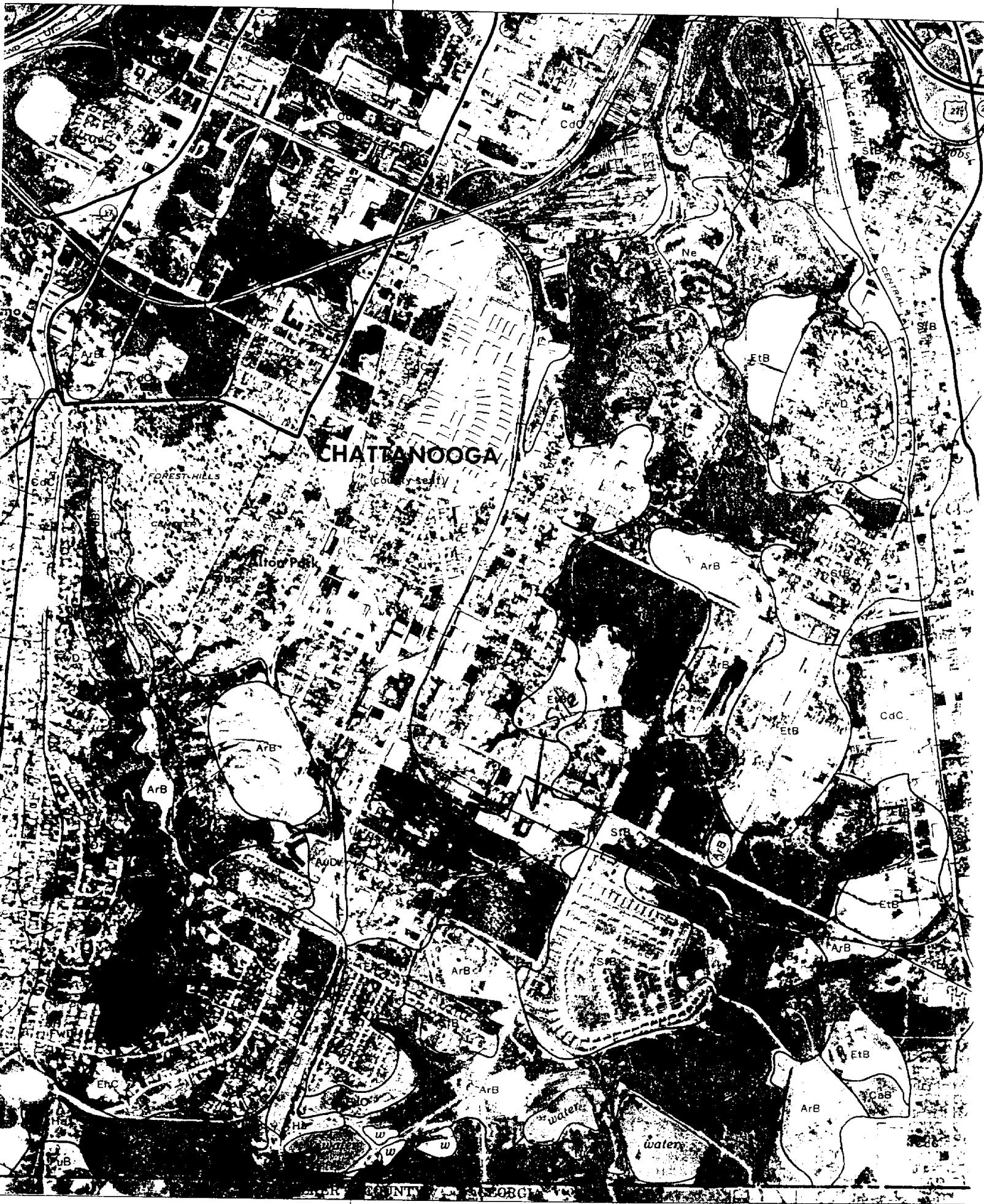
Colbert soils are low in natural fertility and organic matter content. They are slightly acid to strongly acid, except in the layers just above bedrock, which range to mildly alkaline. Permeability is very slow, and the available water capacity is moderate. The shrink-swell potential is high.

The Urban land part of this unit is covered by buildings, streets, parking lots, sidewalks, and other structures.

The disturbed areas have been excavated during the installation of utilities, and cut and filled during grading and shaping operations. They have been altered to the extent that individual soils cannot be identified and predictions cannot be made about their suitability for use without an onsite investigation.

Included in mapping are small areas of a soil that is less clayey in the upper part of the subsoil and areas of a somewhat poorly drained soil that has gray mottles within 10 inches of the surface layer. The somewhat poorly drained soil is on level areas and slight depressions. Also included are some areas of a Talbott soil that has limestone bedrock within 40 inches of the surface.

HAMILTON COUNTY, TENNESSEE — SHEET NUMBER 65



Site No. TND 003328960  
Ref. No. 42  
(see Appendix B)

Site No. TND 003328960  
Ref. No. 43  
(see Appendix B)

Site No. TND 003328960  
Ref. No. 44  
(see Appendix B)

Site No. TND 003328960  
Ref. No. 45  
(see Appendix B)

Site No. TND 003328960  
Ref. No. 46  
(see Appendix B)

Site No. TND 003328960  
Ref. No. 47  
(see Appendix B)

Site No. TND 003328960  
Ref. No. 48  
(see Appendix B)

Site No. TND 003328960  
Appendix B

4-Mile Radius Site Map

**OVERSIZED**

**DOCUMENT**

Site No. TND 003328960  
Appendix C

Photographs

**UNSCANNABLE**

**MEDIA**

**(PHOTOGRAPHS)**

OMB Approval Number: 2050-0095  
Approved for Use Through: 1/92

POTENTIAL HAZARDOUS  
WASTE SITE

IDENTIFICATION

State: | CERCLIS Number:  
TN | TND003328960

PRELIMINARY ASSESSMENT FORM

CERCLIS Discovery Date:  
10/8/91

1. General Site Information

Name:  
Landes Company

Street Address:  
314 Hooker Road

City:  
Chattanooga

State: | Zip Code: | County: | Co. | Cong.  
TN | 37410 | Hamilton | 33 | Dist: 3

Latitude: 85 18' 30.0" Longitude: 34 59' 43.0" Approx. Area of Site: 740520 sq feet Status of Site: Active

2. Owner/Operator Information

Owner:  
Robert Brown

Operator:  
Woodbridge Foam Fabricating, Inc.

Street Address:  
Unknown

Street Address:  
1120 Judd Rd.

City:  
Chattanooga

City:  
Chattanooga

State: | Zip Code: | Telephone:

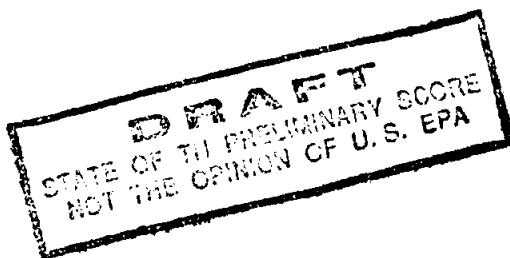
State: | Zip Code: | Telephone:  
TN | 37410 | 615-622-8326

Type of Ownership:  
Private

How Initially Identified:  
Citizen complaint

Appointing Official

Date



POTENTIAL HAZARDOUS  
WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: | CERCLIS Number:  
TN | TND003328960

CERCLIS Discovery Date:  
10/8/91

3. Site Evaluator Information

Name of Evaluator: Craig Stannard	Agency/Organization: Tenn./Div. of Superfund	Date Prepared: 4/26/93
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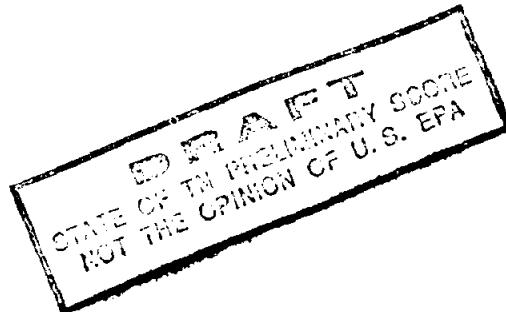
Street Address: 540 McCallie Ave., 5th Floor, Suite 550	City: Chattanooga	State: TN
--	----------------------	--------------

Name of EPA or State Agency Contact: Wayne Everett	Telephone: 615-634-5780
---	----------------------------

Street Address: 540 McCallie Ave., 5th Floor, Suite 550	City: Chattanooga	State: TN
--	----------------------	--------------

4. Site Disposition (for EPA use only)

Emergency Response/Removal Assessment Recommendation: No	CERCLIS Recommendation: Higher Priority SI	Signature:  Name:  Position:
Date:	Date:	



POTENTIAL HAZARDOUS  
WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: TN CERCLIS Number:  
TND003328960

CERCLIS Discovery Date:  
10/8/91

5. General Site Characteristics

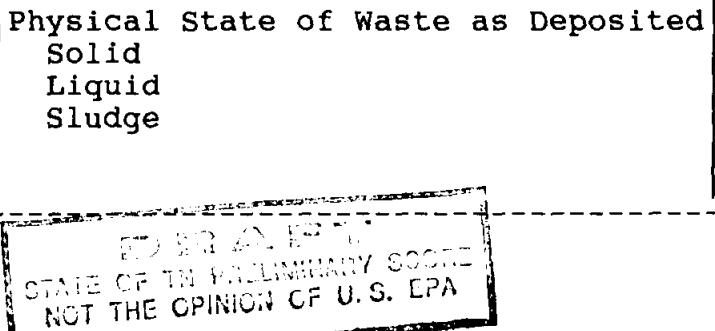
Predominant Land Uses Within 1 Mile of Site: Industrial Commercial Residential	Site Setting: Urban	Years of Operation: Beginning Year: 1947 Ending Year: 1991
---	------------------------	--

Type of Site Operations: Manufacturing Fabricated Structural Metal Products Recycling Junk/Salvage Yard Other Landfill RCRA Small Quantity Generator	Waste Generated: Onsite
	Waste Deposition Authorized By: Former Owner
	Waste Accessible to the Public Yes
	Distance to Nearest Dwelling, School, or Workplace: 200 Feet

6. Waste Characteristics Information

Source Type Pile Non-drum containers Contaminated soil Non-drum containers	Quantity 2.78e+04 cu ft 2.75e+02 gals 2.00e+04 cu ft 2.00e+01 gals	Tier V V V V	General Types of Waste: Metals Organics Inorganics Solvents Paints/Pigments Construction/Demolition Waste Acids/Bases Oily Waste
--	--	--------------------------	--

Tier Legend  
C = Constituent W = Wastestream  
V = Volume A = Area



POTENTIAL HAZARDOUS  
WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: | CERCLIS Number:  
TN | TND003328960

CERCLIS Discovery Date:  
10/8/91

7. Ground Water Pathway

Is Ground Water Used  
for Drinking Water  
Within 4 Miles:

No

Type of Ground Water  
Wells Within 4 Miles:

Private

Depth to  
Shallowest Aquifer:

25 Feet

First Terrain/Aquifer  
Present:

Yes

Is There a Suspected  
Release to Ground  
Water:

Yes

Have Primary Target  
Drinking Water Wells  
Been Identified: No

Nearest Designated  
Wellhead Protection  
Area:

None within 4 Miles

List Secondary Target  
Population Served by  
Ground Water Withdrawn  
From:

0 - 1/4 Mile 0

>1/4 - 1/2 Mile 0

>1/2 - 1 Mile 0

>1 - 2 Miles 0

>2 - 3 Miles 0

>3 - 4 Miles 0

Total 0

DRAFT  
STATE OF TN PRELIMINARY SCORE  
NOT THE OPINION OF U.S. EPA

POTENTIAL HAZARDOUS  
WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: | CERCLIS Number:  
TN | TND003328960

CERCLIS Discovery Date:  
10/8/91

8. Surface Water Pathway

Part 1 of 4

Type of Surface Water Draining  
Site and 15 Miles Downstream:  
Stream  
River

Shortest Overland Distance From Any  
Source to Surface Water:

0 Feet  
0.0 Miles

Is there a Suspected Release to  
Surface Water: Yes

Site is Located in:  
>10 yr - 100 yr floodplai

9. Surface Water Pathway

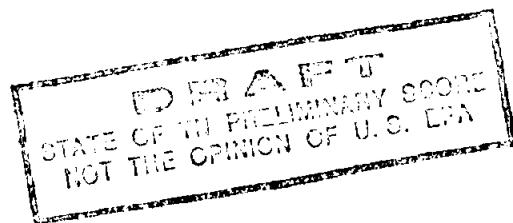
Part 2 of 4

Drinking Water Intakes Along the Surface Water Migration Path: Yes

Have Primary Target Drinking Water Intakes Been Identified: No

Secondary Target Drinking Water Intakes:

Name	Water Body/Flow(cfs)	Population Served
N/A	minimal stream/ <10	0
	Total Within 15 Miles:	0



POTENTIAL HAZARDOUS  
WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: TN CERCLIS Number:  
TND003328960

CERCLIS Discovery Date:  
10/8/91

8. Surface Water Pathway

Part 3 of 4

Fisheries Located Along the Surface Water Migration Path: Yes

Have Primary Target Fisheries Been Identified: Yes

Secondary Target Fisheries:

Fishery Name Water Body Type/Flow(cfs)  
Tennessee River large river/ >10000

8. Surface Water Pathway

Part 4 of 4

Wetlands Located Along the Surface Water Migration Path? (y/n) Yes

Have Primary Target Wetlands Been Identified? (y/n) Yes

Secondary Target Wetlands:

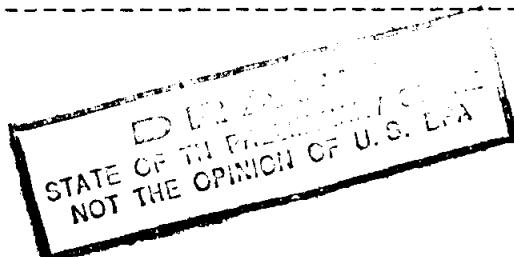
None

Other Sensitive Environments Along the Surface Water Migration Path: Yes

Have Primary Target Sensitive Environments Been Identified: Yes

Secondary Target Sensitive Environments:

None



POTENTIAL HAZARDOUS  
WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: TN CERCLIS Number: TND003328960

CERCLIS Discovery Date:  
10/8/91

**9. Soil Exposure Pathway**

Are People Occupying Residences or  
Attending School or Daycare on or  
Within 200 Feet of Areas of Known  
or Suspected Contamination: Yes  
Total Resident Population: 2

Number of Workers Onsite: 1 - 100

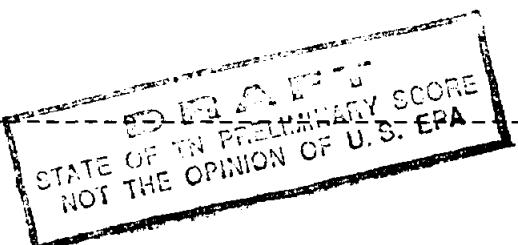
Have Terrestrial Sensitive Environments Been Identified on or Within  
200 Feet of Areas of Known or Suspected Contamination: No

**10. Air Pathway**

Total Population on or Within:	Is There a Suspected Release to Air: No
Onsite 2	
0 - 1/4 Mile 594	Wetlands Located
>1/4 - 1/2 Mile 1789	Within 4 Miles of the Site: No
>1/2 - 1 Mile 7147	
>1 - 2 Miles 28590	Other Sensitive Environments Located
>2 - 3 Miles 47649	Within 4 Miles of the Site: Yes
>3 - 4 Miles 104817	
Total 190588	

Sensitive Environments Within 1/2 Mile of the Site:

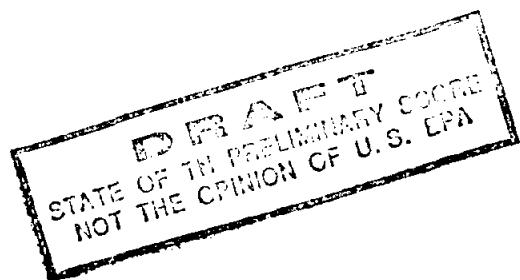
Distance Onsite	Sensitive Environment Type/Wetlands Area(acres) Habitat for Federally designated endangered/threatened species
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Site Name: Landes Company  
CERCLIS ID No.: TND003328960  
Street Address: 314 Hooker Road  
City/State/Zip: Chattanooga, TN 37410

Investigator: Craig Stannard  
Agency/Organization: Tenn./Div. of Superfund  
Street Address: 540 McCallie Ave., 5th Floor, Suite 550  
City/State: Chattanooga, TN

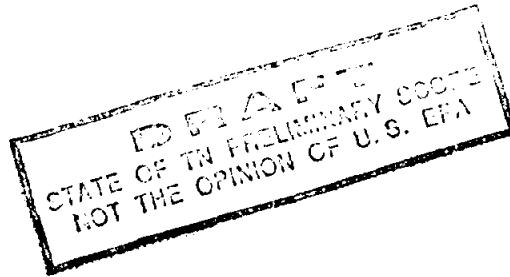
Date: 4/26/93



WASTE CHARACTERISTICS

Waste Characteristics (WC) Calculations:

1 Waste Pile	Pile	Ref:22,29	WQ value	maximum
Volume	2.78E+04 cu ft		4.12E+02	4.12E+02
The waste pile quantity consists of shredder fluff, foundry sand, baghouse dust, slag, separator sludge, and coal and coke debris that is in two main piles; one that is approximately 12 feet high x 30 feet wide x 150 feet long and the other that is approximately 20 feet x 20 feet x 2 feet deep.				
Ref: 21,22,27-29				
2 Drums	Non-drum containers	Ref:22,29	WQ value	maximum
Volume	2.75E+02 gals		5.50E-01	5.50E-01
The quantity of drummed liquids at the site is an estimate based on the reported quantities of liquid substances still present at the site and on observations made during the site reconnaissance.				
Ref: 21,22,27-29				
3 Contaminated soil	Contaminated soil	Ref:22,29	WQ value	maximum
Volume	2.00E+04 cu ft		2.96E-01	2.96E-01
The contaminated soil quantity is an estimate based on the following: 100 feet x 100 feet x 2 feet = 20,000 cubic feet of contaminated soil.				
Ref: 21,22,27-29				
4 Non-Drum Containers	Non-drum containers	Ref:22,29	WQ value	maximum
Volume	2.00E+01 gals		4.00E-02	4.00E-02
The non-drum container volume is an estimate based on the PA site reconnaissance.				
Ref: 27-29				



WQ total 4.13E+02

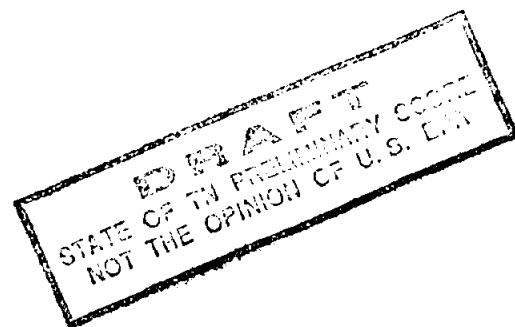
| Waste Characteristics Score: WC = 32

Ground Water Pathway Criteria List  
Suspected Release

Are sources poorly contained? (y/n/u)	Y
Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)? (y/n/u)	Y
Is waste quantity particularly large? (y/n/u)	N
Is precipitation heavy? (y/n/u)	Y
Is the infiltration rate high? (y/n/u)	N
Is the site located in an area of karst terrain? (y/n)	Y
Is the subsurface highly permeable or conductive? (y/n/u)	Y
Is drinking water drawn from a shallow aquifer? (y/n/u)	N
Are suspected contaminants highly mobile in ground water? (y/n/u)	Y
Does analytical or circumstantial evidence suggest ground water contamination? (y/n/u)	Y
Other criteria? (y/n)	N
SUSPECTED RELEASE? (y/n)	Y

Summarize the rationale for Suspected Release:

The waste piles, drums, assorted containers, and contaminated soil at the Landes Co. site are in unlined areas. Some of the waste at the site is mobile and could migrate downward into the shallow water table.



Ground Water Pathway Criteria List  
Primary Targets

Is any drinking water well nearby? (y/n/u) N

Has any nearby drinking water well been closed? (y/n/u) N

Has any nearby drinking water well user reported foul-testing or foul-smelling water? (y/n/u) N

Does any nearby well have a large drawdown/high production rate? (y/n/u) U

Is any drinking water well located between the site and other wells that are suspected to be exposed to a hazardous substance? (y/n/u) N

Does analytical or circumstantial evidence suggest contamination at a drinking water well? (y/n/u) N

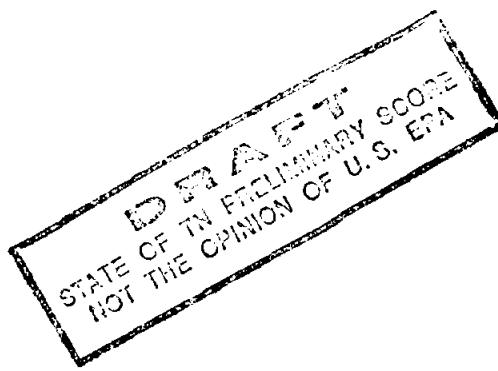
Does any drinking water well warrant sampling? (y/n/u) N

Other criteria? (y/n) N

PRIMARY TARGET(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Targets:

There are no known drinking water wells within a 4-mile radius of the site.



GROUND WATER PATHWAY SCORESHEETS

Pathway Characteristics

		Ref.
Do you suspect a release? (y/n)	Yes	
Is the site located in karst terrain? (y/n)	Yes	
Depth to aquifer (feet):	25	
Distance to the nearest drinking water well (feet):	0	

LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	550		
2. NO SUSPECTED RELEASE		0	
LR =	550	0	

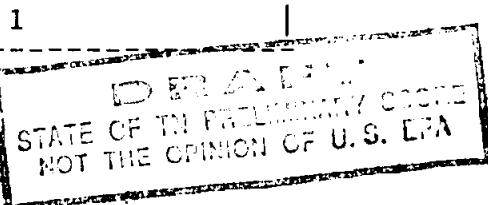
Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 0 person(s)	0		
4. SECONDARY TARGET POPULATION Are any wells part of a blended system? (y/n) N	0	0	
5. NEAREST WELL	0	0	
6. WELLHEAD PROTECTION AREA None within 4 Miles	0	0	
7. RESOURCES	5	0	
T =	5	0	

WASTE CHARACTERISTICS

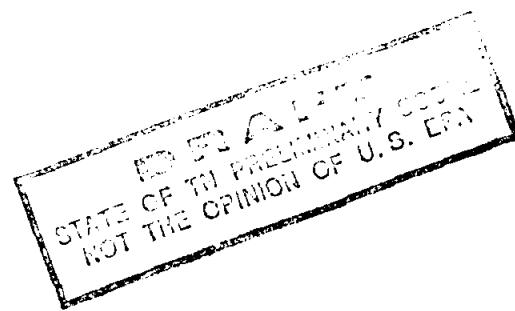
WC = | 32 | 0 |

GROUND WATER PATHWAY SCORE:



## Land Water Target Populations

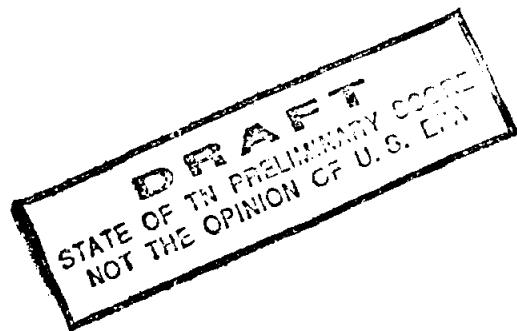
Secondary Target Population Distance Categories	Population Served	Reference	Value
0 to 1/4 mile	0		0
Greater than 1/4 to 1/2 mile	0		0
Greater than 1/2 to 1 mile	0		0
Greater than 1 to 2 miles	0		0
Greater than 2 to 3 miles	0		0
Greater than 3 to 4 miles	0		0
Total			0



**Portionment Documentation for a Blended System**

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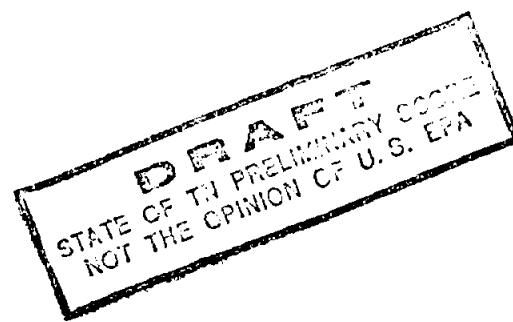


Surface Water Pathway Criteria List  
Suspected Release

Is surface water nearby? (y/n/u)	Y
Is waste quantity particularly large? (y/n/u)	N
Is the drainage area large? (y/n/u)	N
Is rainfall heavy? (y/n/u)	Y
Is the infiltration rate low? (y/n/u)	Y
Are sources poorly contained or prone to runoff or flooding? (y/n/u)	Y
Is a runoff route well defined(e.g.ditch/channel to surf.water)? (y/n/u)	Y
Is vegetation stressed along the probable runoff path? (y/n/u)	U
Are sediments or water unnaturally discolored? (y/n/u)	N
Is wildlife unnaturally absent? (y/n/u)	Y
Has deposition of waste into surface water been observed? (y/n/u)	U
Is ground water discharge to surface water likely? (y/n/u)	N
Does analytical/circumstantial evidence suggest S.W. contam? (y/n/u)	Y
Other criteria? (y/n)	N
SUSPECTED RELEASE? (y/n)	Y

## Summarize the rationale for Suspected Release:

The Landes Company site has had a long history of reported discharges to the storm water drainage system that underlies the site and empties into a tributary of Chattanooga Creek. In addition, wastes are present at the site that could enter surface drainages that feed into Chattanooga Creek.



Surface Water Pathway Criteria List  
Primary Targets

Is any target nearby? (y/n/u) If yes: Y

- N Drinking water intake
- Y Fishery
- Y Sensitive environment

Has any intake, fishery, or recreational area been closed? (y/n/u) Y

Does analytical or circumstantial evidence suggest surface water contamination at or downstream of a target? (y/n/u) Y

Does any target warrant sampling? (y/n/u) If yes: Y

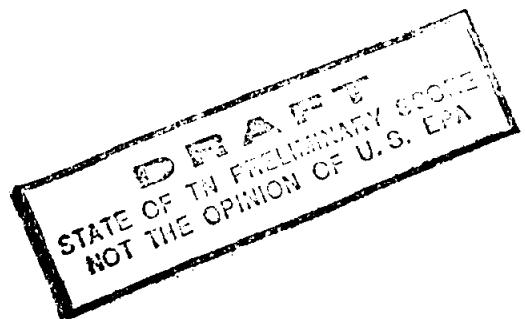
- N Drinking water intake
- Y Fishery
- Y Sensitive environment

Other criteria? (y/n) N

PRIMARY INTAKE(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Intakes:

There are no known drinking water intakes downstream of the site.



Ref: 15,19,30  
continued -----

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continued -----

Other criteria? (y/n) N

PRIMARY FISHERY(IES) IDENTIFIED? (y/n) Y

Summarize the rationale for Primary Fisheries:

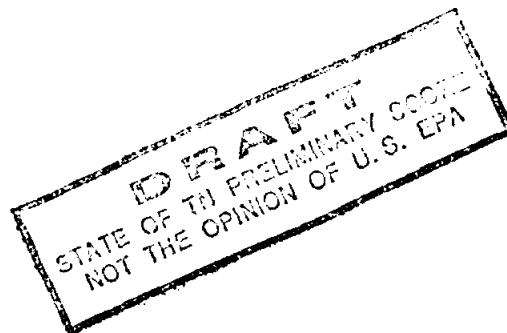
Chattanooga Creek is a primary fishery approximately 1/4 mile downstream from the site. In addition, there are wetlands along the southern perimeter of the site and along Chattanooga Creek immediately north of the site.

Other criteria? (y/n) N

PRIMARY SENSITIVE ENVIRONMENT(S) IDENTIFIED? (y/n) Y

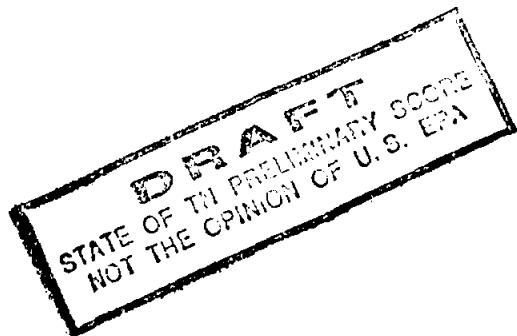
Summarize the rationale for Primary Sensitive Environments:

There are definable wetland habitats immediately to the south and to the north of the site along Chattanooga Creek.



SURFACE WATER PATHWAY SCORESHEETS

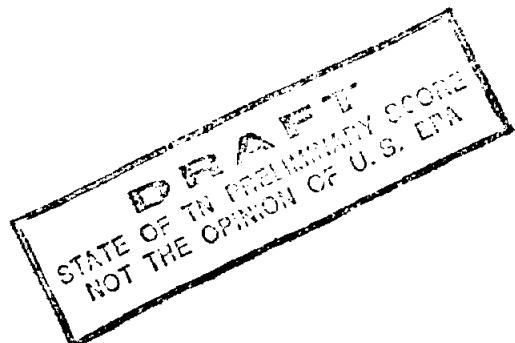
Pathway Characteristics		Ref.
Do you suspect a release? (y/n)	Yes	
Distance to surface water (feet):	0	27,29
Flood frequency (years):	100	3
What is the downstream distance (miles) to:		
a. the nearest drinking water intake?	N.A.	15
b. the nearest fishery?	0.2	26,37
c. the nearest sensitive environment?	0.0	27,29
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release
1. SUSPECTED RELEASE	550	
2. NO SUSPECTED RELEASE		0
LR =	550	0



## Ranking Water Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
3. Determine the water body type, flow (if applicable), and number of people served by each drinking water intake.			
4. PRIMARY TARGET POPULATION 0 person(s)	0		
5. SECONDARY TARGET POPULATION Are any intakes part of a blended system? (y/n): N	0	0	
6. NEAREST INTAKE	0	0	
7. RESOURCES	5	0	
T =	5	0	

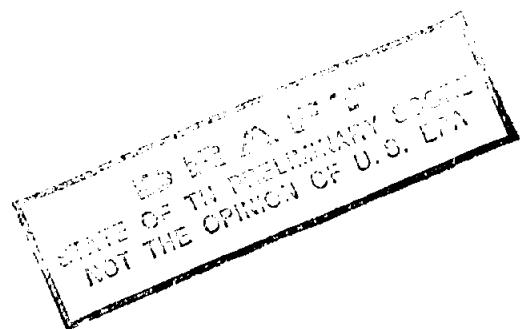
## Drinking Water Threat Target Populations



**Portionment Documentation for a Blended System**

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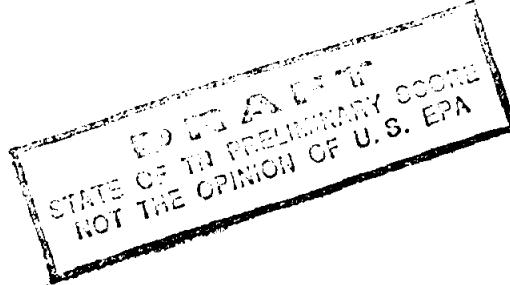


Human Food Chain Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
8. Determine the water body type and flow for each fishery within the target limit.			
9. PRIMARY FISHERIES	300		
10. SECONDARY FISHERIES	0	0	
T =	300	0	

Human Food Chain Threat Targets

Fishery Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 Chattanooga Creek	Y	primary fishery		300
2 Tennessee River	N	>10000 cfs		12
3 Chattanooga Creek Wetland	Y	primary fishery		300
Total Primary Fisheries Value				300
Total Secondary Fisheries Value				0

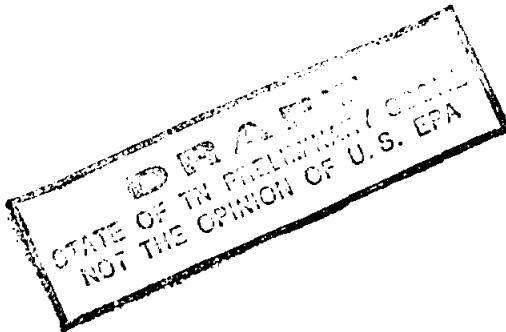


Environmental Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
11. Determine the water body type and flow (if applicable) for each sensitive environment.			
12. PRIMARY SENSITIVE ENVIRONMENTS	300		
13. SECONDARY SENSITIVE ENVIRONS.	0	0	
T =	300	0	

Environmental Threat Targets

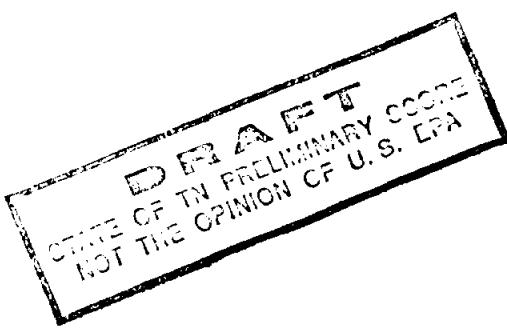
Sensitive Environment Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 Chattanooga Creek Wetland	Y	primary sens. envir.		300
Total Primary Sensitive Environments Value				300
Total Secondary Sensitive Environments Value				0



Surface Water Pathway Threat Scores

Threat	Likelihood of Release(LR) Score	Targets(T) Score	Pathway Waste Characteristics (WC) Score	Threat Score LR x T x WC / 82,500
Drinking Water	550	5	32	1
Human Food Chain	550	300	32	64
Environmental	550	300	32	60

SURFACE WATER PATHWAY SCORE: | 100 |



Soil Exposure Pathway Criteria List  
Resident Population

Is any residence, school, or daycare facility on or within 200 feet of an area of suspected contamination? (y/n/u) N

Is any residence, school, or daycare facility located on adjacent land previously owned or leased by the site owner/operator? (y/n/u) U

Is there a migration route that might spread hazardous substances near residences, schools, or daycare facilities? (y/n/u) U

Have onsite or adjacent residents or students reported adverse health effects, exclusive of apparent drinking water or air contamination problems? (y/n/u) Y

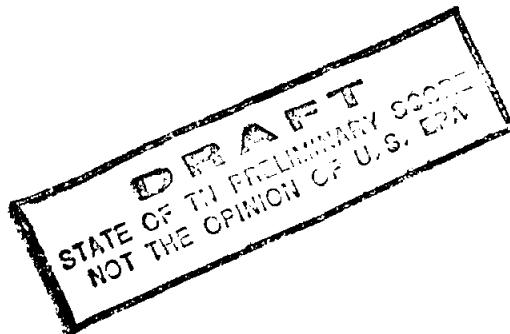
Does any neighboring property warrant sampling? (y/n/u) N

Other criteria? (y/n) N

RESIDENT POPULATION IDENTIFIED? (y/n) Y

Summarize the rationale for Resident Population:

There are no known schools or daycare facilities within 200 feet of the site. However, the Formco of Tennessee business office trailer at the northeast corner of the site is a suspected residence to one or two people.



SOIL EXPOSURE PATHWAY SCORESHEETS

Pathway Characteristics		Ref.
Do any people live on or within 200 ft of areas of suspected contamination? (y/n)	Yes	29
Do any people attend school or daycare on or within 200 ft of areas of suspected contamination? (y/n)	Yes	29
Is the facility active? (y/n):	Yes	29

LIKELIHOOD OF EXPOSURE	Suspected Contamination	References
1. SUSPECTED CONTAMINATION LE =	550	

Targets

2. RESIDENT POPULATION 2 resident(s) 0 school/daycare student(s)	20	29 29
3. RESIDENT INDIVIDUAL	50	
4. WORKERS 1 - 100	5	29
5. TERRES. SENSITIVE ENVIRONMENTS	0	
6. RESOURCES	5	
T =	80	

WASTE CHARACTERISTICS

WC = | 32 |

RESIDENT POPULATION THREAT SCORE:

| 17 |

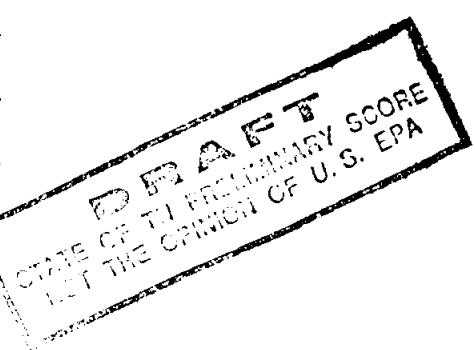
NEARBY POPULATION THREAT SCORE:

| 1 |

Population Within 1 Mile: 1 - 10,000

SOIL EXPOSURE PATHWAY SCORE:

| 18 |



## 1 Exposure Pathway Terrestrial Sensitive Environments

EPA AF-3  
STATE OF TN PRELIMINARY SCORE  
NOT THE OFFICIAL CF U.S. EPA

Air Pathway Criteria List  
Suspected Release

Are odors currently reported? (y/n/u) N

Has release of a hazardous substance to the air  
been directly observed? (y/n/u) N

Are there reports of adverse health effects (e.g., headaches,  
nausea, dizziness) potentially resulting from migration  
of hazardous substances through the air? (y/n/u) N

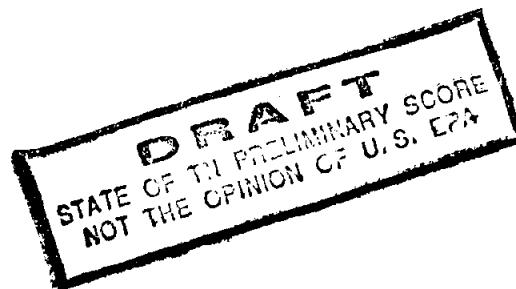
Does analytical/circumstantial evidence suggest release to air? (y/n/u) N

Other criteria? (y/n) N

SUSPECTED RELEASE? (y/n) N

Summarize the rationale for Suspected Release:

No known air releases have occurred at the site. The quantity of volatile substances currently present at the site is considered to be relatively small and for all intensive purposes, the site is inactive.



Ref: 21,22,29

AIR PATHWAY SCORESHEETS

Pathway Characteristics

		Ref.
Do you suspect a release? (y/n)	No	
Distance to the nearest individual (feet):	200	29
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release
1. SUSPECTED RELEASE	0	
2. NO SUSPECTED RELEASE		500
LR =	0	500

Targets

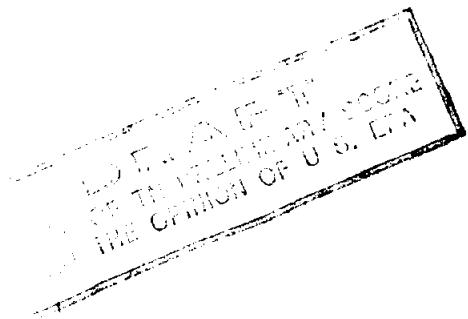
TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 0 person(s)	0		
4. SECONDARY TARGET POPULATION	0	74	
5. NEAREST INDIVIDUAL	0	20	
6. PRIMARY SENSITIVE ENVIRONS.	0		
7. SECONDARY SENSITIVE ENVIRONS.	0	0	
8. RESOURCES	0	5	
T =	0	99	

WASTE CHARACTERISTICS

WC = | 0 | 32 |

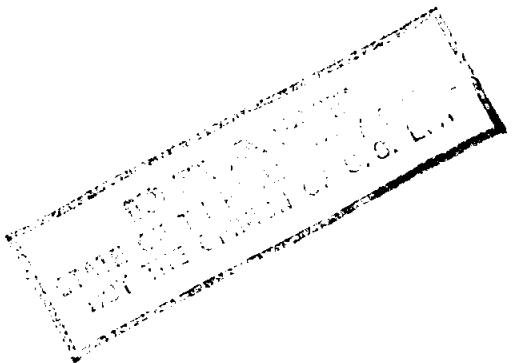
AIR PATHWAY SCORE:

| 19 |



Pathway Secondary Target Populations

Distance Categories	Population	References	Value
Onsite	2	44,47	1
Greater than 0 to 1/4 mile	594	44,47	13
Greater than 1/4 to 1/2 mile	1789	44,47	9
Greater than 1/2 to 1 mile	7147	44,47	8
Greater than 1 to 2 miles	28590	44,47	8
Greater than 2 to 3 miles	47649	44,47	12
Greater than 3 to 4 miles	104817	44,47	23
Total Secondary Population Value			74



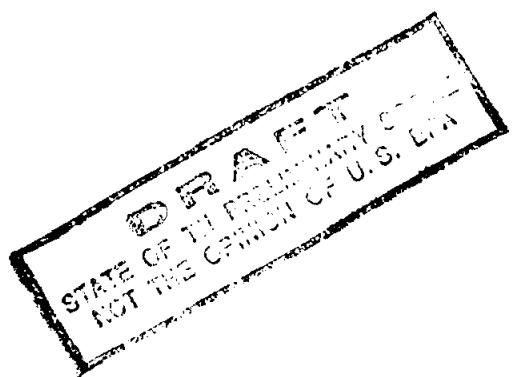
## Pathway Primary Sensitive Environments

## Air Pathway Secondary Sensitive Environments



**SITE SCORE CALCULATION**

	<b>SCORE</b>
GROUND WATER PATHWAY SCORE:	1
SURFACE WATER PATHWAY SCORE:	100
SOIL EXPOSURE PATHWAY SCORE:	18
AIR PATHWAY SCORE:	19
<b>SITE SCORE:</b>	<b>52</b>



SUMMARY

1. Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water? No

If yes, identify the well(s).

If yes, how many people are served by the threatened well(s)? 0

2. Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water?

- |  |     |
|--|-----|
| A. Drinking water intake                                     | No  |
| B. Fishery   | Yes |
| C. Sensitive environment (wetland, critical habitat, others) | Yes |

If yes, identity the target(s).

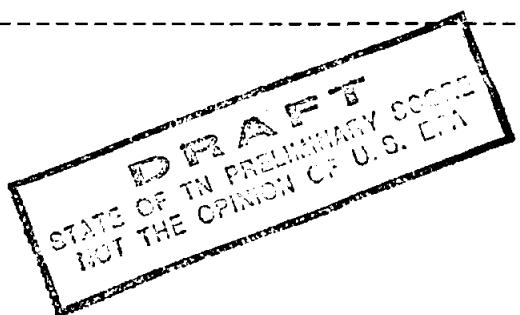
Chattanooga Creek fishery  
Chattanooga Creek wetlands  
Tennessee River fishery

3. Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility? Yes

If yes, identify the properties and estimate the associated population(s)  
Piney Woods Elementary School

4. Are there public health concerns at this site  
that are not addressed by PA scoring considerations? No

If yes, explain:



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5. Hamilton County, Tennessee. 1967. Tax Assessors Office. Chattanooga Property Map #167-E. Revised May 17,1988.
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11. Moose, G. 1991. (Regional Director, Tennessee Division of Solid Waste Management). Letter to R. Landes (President, Landes Company, Inc.). RE: NOTICE OF VIOLATION Under the Tennessee Hazardous Waste Management Act (TCA 68-46, Part 1, Sections 101 - 119) Landes Company, Inc., NF-33-105-0123. January 14.

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14. TDC. 1989. "Endangered Species-Hamilton County Printout." January 31.
15. TDDWS. 1991. Meeting Notes and TAWC Inlet Map. February 26.
16. TDGWP. 1987. "Information Concerning Wells in the Chattanooga Area", memo to Ferman Miller (TDSF), from C. Stannard (TDGWP), dated November 19.
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27. TDSF. 1993a. "Field Log Book for the Landes Company Site PA." March 19."
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34. TDSWM. 1991b. "Landes Corp. Site Sampling," memo to the TDSWM Files, from D. Smith (TDSWM), dated February 1.
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## PA REVIEW CHECKLIST

Site Name: LAJDE'S CANDY

CERCLIS ID No.: TND-003328166

Location (City, County, State): CHICAGO, IL, Cook Co., IL

Prepared by (Agency): EPA, Chicago Regional Office

Date: 4/26/93

Reviewer Name: L. CO.

Agency: EPA

Document Reviewed: PA Report  
(PA Report/Scoresheets/Both)

Date of Review: 6/29/93

## PA REPORT REVIEW CHECKLIST

The preliminary assessment (PA) review checklist was designed to evaluate the quality of PA work products. The review will ensure that EPA decisions concerning the disposition of sites are made in a nationally consistent, scientifically based, and efficient manner.

The order in which information is presented in the PA does not have to be consistent with the checklist, but the PA should be organized in a logical sequence and consistent with PA guidance. Relevant pages of the PA guidance manual (Guidance for Performing Preliminary Assessments Under CERCLA, Publication 9345.0-01A, September 1991) are provided in parentheses throughout the checklist.

All factual information should be referenced in the PA report and PA scoresheets with page numbers provided. Place a checkmark in the "Ref(s) Checked" column when information is verified in the references by the reviewer. If the information is not supported by the reference material or the information is not referenced, place an NS in this column. Reviewer comments may be written in the space provided, with attached sheets as necessary.

Indicate in the left column whether the following information is included in the PA narrative by placing a Y (yes), N (no), or NA (does not apply to the site) in the space provided. Place an I (incomplete) in the left column for information that is included but is not complete, and an S (scoresheets) if the information is included in the scoresheets but not in the PA report. The shaded areas highlight several factors that most often affect an evaluation at the PA stage.

**I. PA Content****Introduction**

Does the PA include the following information:

- |                                     |   |                         |
|-------------------------------------|---|-------------------------|
| <input checked="" type="checkbox"/> | Agency/name of organization performing PA (p. 145)            | Ref(s)<br><u>      </u> |
| <input checked="" type="checkbox"/> | Authority under which PA was conducted (p. 145)               | <u>      </u>           |
| <input checked="" type="checkbox"/> | Site name (p. 14)   | <u>      </u>           |
| <input checked="" type="checkbox"/> | Site alias (names other than that entered in CERCLIS) (p. 15) | <u>      </u>           |
| <input checked="" type="checkbox"/> | Site address (street, city, county, state) (p. 145)           | <u>      </u>           |
| <input checked="" type="checkbox"/> | CERCLIS ID number (p.15)                                      | <u>      </u>           |
| <input checked="" type="checkbox"/> | Site name and ID number identical to CERCLIS entry?           | <u>      </u>           |
| <input checked="" type="checkbox"/> | Purpose of PA (p. 145)  | <u>      </u>           |
| <input checked="" type="checkbox"/> | <b>RCRA status (p. 16)</b>                                    | <u>      </u>           |

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Did PA activities include the following:

File review? (pp. 21-23) Y/N Target survey? (pp. 31-32) Y/N Site reconnaissance? (pp. 27-29) Y/N Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Ref(s)  
Checked?

Site Location/Description

Does the PA include the following information:

- |                                     |  |       |
|-------------------------------------|--|-------|
| <input checked="" type="checkbox"/> | Geographic coordinates (latitude/longitude) (p. 40)                          | _____ |
| <input checked="" type="checkbox"/> | Worksheets for latitude/longitude coordinate calculations (p. 40)            | _____ |
| <input checked="" type="checkbox"/> | Site setting/nearby land use (Appendix D, p. 4)                              | _____ |
| <input checked="" type="checkbox"/> | Type of site (e.g., plating facility, landfill) (p. 41)                      | _____ |
| <br>                                |  |       |
| <input checked="" type="checkbox"/> | Site status (active/inactive) (p. 14)  | _____ |
| <input checked="" type="checkbox"/> | Years of operation (p. 40)   | _____ |
| <input checked="" type="checkbox"/> | Current site activities/use (p. 145)   | _____ |
| <input checked="" type="checkbox"/> | Current disposal/storage practices (p. 40)                                   | _____ |
| <br>                                |  |       |
| <input checked="" type="checkbox"/> | Source characterization (active, inactive, and historical sources) (p. 42)   | _____ |
| <input checked="" type="checkbox"/> | Description (p. 43)  | _____ |
| <input checked="" type="checkbox"/> | Dimensions (p. 14)   | _____ |
| <input checked="" type="checkbox"/> | Known or suspected wastes and hazardous substances (p. 40)                   | _____ |
| <input checked="" type="checkbox"/> | Description of containment and control (p. 40)                               | _____ |
| <br>                                |  |       |
| <input checked="" type="checkbox"/> | Size of site (p. 14)   | _____ |
| <input checked="" type="checkbox"/> | Site accessibility (identification of access restrictions, natural barriers) | _____ |
| <input checked="" type="checkbox"/> | Site location map (p. 145)   | _____ |
| <input checked="" type="checkbox"/> | 1-mile source radius (pp. 23, 145)   | _____ |
| <input checked="" type="checkbox"/> | Overland drainage route(s) (p. 145)  | _____ |
| <input checked="" type="checkbox"/> | Probable point of entry (PPE) to surface water (Appendix C, p. 5)            | _____ |
| <input checked="" type="checkbox"/> | Nearest well, intake, residence (p. 145)                                     | _____ |
| <input checked="" type="checkbox"/> | Sensitive environments (p. 145)  | _____ |

Site Name: Lindbergh

- Site sketch (p. 44) \_\_\_\_\_  
 Major structures (e.g., buildings, paved areas, fences) (p. 44) \_\_\_\_\_  
 Source areas (p. 44) \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Operational History and Waste Characteristics Ref(s)  
Does the PA adequately include the following information? Checked?

- Ownership (public/private/other) (p. 40) \_\_\_\_\_  
 Current owners, address(es), and dates of ownership (p. 40) \_\_\_\_\_  
 Current operators, address(es), and dates of operation (p. 40) \_\_\_\_\_  
 Former owners, address(es), and dates of ownership (p. 40) \_\_\_\_\_  
 Former operators, address(es), and dates of operation (p. 40) \_\_\_\_\_  
 Description of historical site activities (p. 40) \_\_\_\_\_  
 Description of wastes generated on site (p. 40) \_\_\_\_\_  
 Historical disposal/storage practices (p. 40) \_\_\_\_\_  
 Historical information on spills (p. 40) \_\_\_\_\_  
 Past source areas (if a removal has occurred) (p. 40) \_\_\_\_\_  
 Removal actions, including descriptions, dates, agencies that conducted the removal, and destination of wastes removed (p. 145) \_\_\_\_\_  
 Known/estimated waste quantity (i.e., constituent, wastestream, volume, and area, as applicable) for each source (pp. 44-51) \_\_\_\_\_  
 Information on permits, including issuing agency, date, discussion of inspection results, permit numbers, and violations (p. 145) \_\_\_\_\_  
 Information on other regulatory agency involvement (p. 145) \_\_\_\_\_

Site Name: \_\_\_\_\_

Other investigations, including identification of investigating agency, date, and results (pp. 21-30) \_\_\_\_\_

Previous sampling, if any, including discussion of analytical data and summary of results (p. 145) \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Ground Water Pathway \_\_\_\_\_  
Does the PA include the following information:

Ref(s)  
Checked?

Physiographic province underlying site/sources \_\_\_\_\_

Depth to shallowest aquifer (p. 56) \_\_\_\_\_

Permeability of strata overlying shallowest aquifer (p. 145) \_\_\_\_\_

Net precipitation (p. 54) \_\_\_\_\_

Identification of aquifers in order of increasing depth (p. 145) \_\_\_\_\_

Aquifer description, including use, thicknesses, general flow direction (p. 145) \_\_\_\_\_

Confining layers (p. 145) \_\_\_\_\_

Aquifer interconnections within 4 miles of the site (or within 2 miles if source boundaries are well defined) (p. 145) \_\_\_\_\_

Aquifer discontinuities within 4 miles of the site (p. 145) \_\_\_\_\_

Karst features (if non-karst, this should be stated)  
(pp. 55, 57-58) \_\_\_\_\_

Citizen complaints \_\_\_\_\_

Well closures (p. 26) \_\_\_\_\_

Site Name: Lake M/S

Comments: \_\_\_\_\_

Is sufficient information provided to assess the likelihood of a release of hazardous substances to ground water? (pp. 53-58) Y/N X

Comments: \_\_\_\_\_

#### Ground Water Targets

Ref(s)  
Checked?

Is the following ground water target information included:

- Distance to nearest drinking water well (p. 73)** \_\_\_\_\_
- Description of municipal and stand-by wells, including location/distance from site, depth of well/aquifer from which water is drawn (pp. 14, 62-65) \_\_\_\_\_
- If municipal and stand-by wells are part of a blended system, total number of wells/intakes that contribute to the overall system and the percent contribution of each well/intake within the target distance limit (pp. 62-64) \_\_\_\_\_
- Populations served by municipal well(s), including stand-by wells, by distance category within 4 miles of the site (pp. 14, 62-65) \_\_\_\_\_
- Description of private wells within 4 miles of the site, including aquifer(s) from which water is drawn and associated population per distance category (pp. 14, 65) \_\_\_\_\_
- Other uses of ground water (e.g., irrigation, industrial) (p. 75) \_\_\_\_\_
- Wellhead Protection Areas (p. 74) \_\_\_\_\_

Site Name: LAN OF S

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

As presented, does the ground water population description provide enough information to calculate an HRS target value? (pp. 68-75) Y/N X

Comments: There are few targets in this area  
of Chattanooga  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Surface Water Pathway Ref(s)  
Checked?

Does the PA include the following information:

Sketch of surface water migration path indicating probable point of entry (PPE) and target locations (pp. 82, 86-88) \_\_\_\_\_

Identification of the surface water migration path (p. 146) \_\_\_\_\_

Facility discharges to surface water (including permit information) \_\_\_\_\_

Distance to surface water (p. 81) \_\_\_\_\_

Floodplain designations/flood frequency (p. 83) \_\_\_\_\_

Soil type and permeability of overland drainage route (p. 79) \_\_\_\_\_

Drainage area description (p. 79) \_\_\_\_\_

2-year, 24-hour rainfall (p. 79) \_\_\_\_\_

Mean annual precipitation (p. 79) \_\_\_\_\_

Water body types along 15-stream-mile migration route, including segment description and intermittent/perennial depiction (p. 91) \_\_\_\_\_

Site Name: \_\_\_\_\_

- Stream flow characteristics of each segment (p. 91) \_\_\_\_\_
- Visual signs of contamination (e.g., oily sheen, stressed vegetation, sediment discoloration, absence of wildlife) (pp. 80, 95) \_\_\_\_\_
- Fishery, intake, and/or surface water recreational area closures (p. 95) \_\_\_\_\_

Comments: \_\_\_\_\_

*Ort Creek is a closed fishery - not stated.*

Is sufficient information provided to assess the likelihood of a release of hazardous substances to surface water? (pp. 78-85) Y/N

Comments: \_\_\_\_\_

Surface Water Targets

Ref(s)  
Checked?

Is the following surface water target information included:

- Identification and location of drinking water intakes, including standby intakes (p. 88) \_\_\_\_\_
- Population served by each intake (p. 90) \_\_\_\_\_
- Apportioned population if the intake is part of a blended system (p. 90) \_\_\_\_\_
- Description and location of fisheries (p. 91) \_\_\_\_\_
- ~~Organisms fished~~ → *Organisms fished* \_\_\_\_\_
- Other uses of surface water (p. 102) \_\_\_\_\_
- Description and location of sensitive environments in or contiguous to the surface water migration path (p. 92) \_\_\_\_\_
- Wetland frontage (p. 93) \_\_\_\_\_

Site Name: Lake

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

As presented, does the surface water population description provide enough information to calculate an HRS target value for the drinking water threat? (pp. 88-90, 94-102) Y/N/NA Y For the human food chain threat? (pp. 91-92, 103-104)

Y/N/NA Y For the environmental threat? (pp. 92-93, 105-107) Y/N/NA Y

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### Soil Exposure Pathway

Ref(s)  
Checked?

Does the PA include the following information:

Identification of known/suspected areas of contamination  
(pp. 110-111) \_\_\_\_\_

Discussion of previous surface soil sampling, including analytical data and summary of results (p. 145-146) \_\_\_\_\_

Attractiveness/accessibility of areas of contamination \_\_\_\_\_

#### Soil Exposure Targets

Is the following soil exposure target information included:

Residences, schools, and day care centers and associated populations within 200 feet of an area of known/suspected contamination (or within 200 feet and on the property of an area of contamination if boundaries of the area are well defined) (p. 118) \_\_\_\_\_

Site Name: Lin DCs

- Work areas and number of workers on site within 200 feet of an area of known/suspected contamination (p. 115) \_\_\_\_\_
- Use of site/areas of contamination (i.e., resources) (p. 123) \_\_\_\_\_
- Terrestrial sensitive environments located on an area of known/suspected contamination (pp. 116, 122) \_\_\_\_\_
- Nearby population within a 1-mile travel distance in 0 to 1/4 mile, >1/4 to 1/2 mile, and >1/2 to 1 mile distance categories (p. 124) \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

As presented, does the soil exposure population description provide enough information to calculate a resident population target value? (pp. 118-123)

Y/N/NA  Nearby population target value? (p. 124) Y/N

Comments: \_\_\_\_\_  
*Facts adequate but could be  
much more complete*  
\_\_\_\_\_  
\_\_\_\_\_

#### Air Pathway

Ref(s)  
Checked?

Does the PA include the following information:

- Direct observation of substances released to air (p. 127) \_\_\_\_\_
- Site reconnaissance safety monitoring instrument (HNu, OVA) results \_\_\_\_\_
- Description of cover material/containment (p. 40) \_\_\_\_\_
- Discussion of previous air sampling, if any, including analytical data and summary of results (p. 127) \_\_\_\_\_
- Reported odors/citizen complaints (p. 127) \_\_\_\_\_
- Known reports of adverse health effects associated with a suspected/known release (p. 127) \_\_\_\_\_

Site Name: CANES

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Is sufficient information provided to assess the likelihood of a release of hazardous substances to air? (p. 126-130) Y/N N

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Air Targets

Ref(s)  
Checked?

Is the following air target information included:

- |          |  |       |
|----------|--|-------|
| <u>/</u> | Distance to nearest residence or regularly occupied building (p. 137)  | _____ |
| <u>M</u> | Population within 0 to 1/4 mile, >1/4 to 1/2 mile, >1/2 to 1 mile, >1 to 2 miles, >2 to 3 miles, and >3 to 4 miles (pp. 131-132) | _____ |
| <u>N</u> | Resources within 1/2 mile of the site (p. 140)   | _____ |
| <u>/</u> | Identification and location of sensitive environments within 1/2 mile of the site (pp. 138-139)                                  | _____ |

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Site Name: Lando's

As presented, does the air population description provide enough information to calculate an HRS target value? (pp. 131-140) Y/N A

Comments: Possibly full onsite workers

A.R. Pathway glazed over due  
to perceived lack of threat

Photodocumentation Log

Are photos of the site, accompanied by a written description and reference to their location on a site map, included as an attachment to the PA report? (p. 147)

Y/N

Comments: Good photo log

Documentation

Are the following references included with the report?

- Topographic map with 4-mile radius indicated (p. 23)
- Population apportionment and calculation worksheets (Appendix C, p. 30)
- County census data or population database (e.g., GEMS) (p. 24)
- Field reconnaissance logbook (p. 29)

Comments: \_\_\_\_\_

Is the information throughout the narrative adequately referenced? (p. 143) Y/N

Comments: Usually

Some refs are not correct.

Are statements in the narrative supported by the references cited? Y/N

Comments: Usually

Are page numbers provided in reference citations? Y/N

## II. PA Quality

Does the PA provide sufficient information for SI planning? Y/N X

Comments: \_\_\_\_\_

Is the information in the PA report presented in a format consistent with PA guidance? (pp. 143-144) Y/N ✓

Comments: Not follow it exactly but does follow it.

Do all pathway characteristics that could significantly impact the site score appear to have been sufficiently addressed in the PA? Y/N X

All target information? Y/N X

All operational information? Y/N X

Comments: Pathway + Soil  
Pathway incomplete

Are wastes adequately characterized based on available information? (pp. 44-51)

Y/N Y

Comments: \_\_\_\_\_

Did the PA highlight concerns that may not be addressed by HRS factors? (e.g., imminent explosion potential, Emergency Response notification) Y/N/NA X

Comments: School nearby but greater than 200 ft.

*(Anops)*  
Site Name: \_\_\_\_\_

Is the information presented in the PA report consistent with the information provided in the preliminary HRS scoresheets? Y/N

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Are projected releases of hazardous substances to the environment, if any, appropriate for the site? Y/N/NA

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Is the designation of primary and secondary targets appropriate for significant or potentially significant pathways? Y/N

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Except for Air & Soil*

Does the PA provide sufficient information to support a recommendation?

Y/N

Does the reviewer agree with the PA recommendation? (i.e., SEA, H or L)

Y/N

Comments: *local planning*  
\_\_\_\_\_  
\_\_\_\_\_